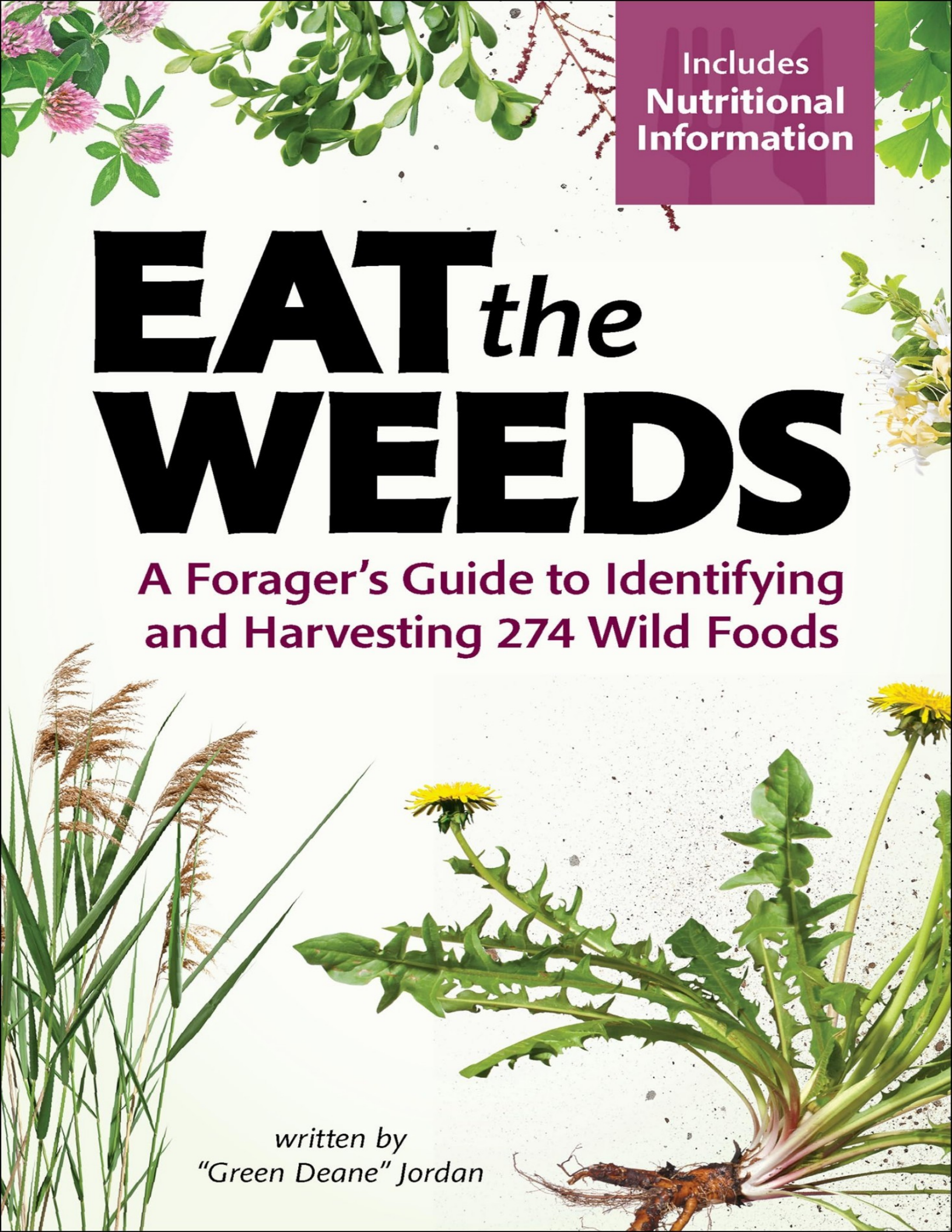


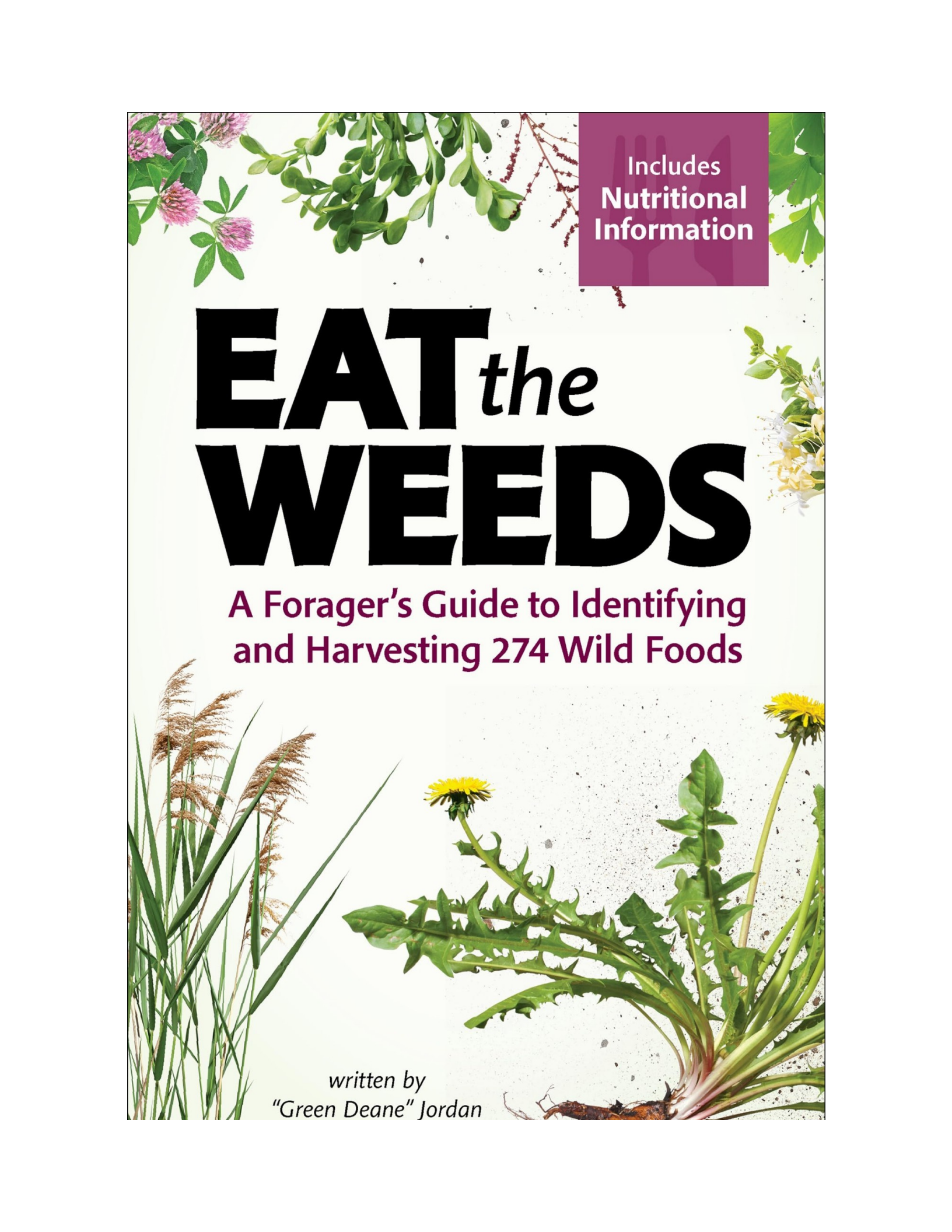


Includes
Nutritional
Information

EAT *the* **WEEDS**

**A Forager's Guide to Identifying
and Harvesting 274 Wild Foods**

written by
"Green Deane" Jordan



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PUBLICATIONS
Adventure
an imprint of AdventureKEEN



Cover and interior design by Jonathan Norberg

Edited by Ritchey Halphen, Brett Ortler, Adrienne Onofri

Proofread by Emily Beaumont

Technical Reviewer: Dr. Stephen Brockman, PhD

Photo credits on [page 366](#)

Library of Congress Cataloging-in-Publication Data

Names: Jordan, Deane, author.

Title: Eat the weeds / Deane Jordan.

Identifiers: LCCN 2022037620 (print) | LCCN 2022037621 (ebook) |

ISBN 9781647551797 (paperback) | ISBN 9781647551803 (ebook)

Subjects: LCSH: Wild plants, Edible—United States—Identification. |
Cooking (Wild foods). | Field guides.

Classification: LCC QK98.5.U6 J673 2023 (print) | LCC QK98.5.U6
(ebook) | DDC 581.6/32—dc23/eng/20220819

10 9 8 7 6 5 4 3 2 1

Eat the Weeds: A Forager's Guide to Identifying and Harvesting 274 Wild Foods

Copyright © 2023 by Deane Jordan

Published by Adventure Publications

An imprint of AdventureKEEN

310 Garfield Street South

Cambridge, Minnesota 55008

(800) 678-7006

www.adventurepublications.net

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Manufactured in China

ISBN 978-1-64755-179-7 (pbk.); eISBN 978-1-64755-180-3

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THE WEEDS

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Agave

Alligator weed

Amaranth

American beautyberry

American Black Nightshade

American lotus

Aronia (Black Chokeberry)

Aspen and poplar

Australian pine
Bacopa (water hyssop)
Balloon vine
Barnyard grass
Basswood
Beach Orach
Beech
Begonia
Betony
Birch
Bird pepper
Biscuitroot
Bitter cress
Bitter Lettuce
Blackberry
Black ironwood
Black medic
Black walnut
Bladder wrack
Blolly (Beef tree)
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Bulrush
Bunchberry
Burdock
Burnweed
Butternut

Cabbage palm
Candyroot
Canna
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Cattail
Che
Checkerberry
Chickweed
Chicory
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Chinquapin
Chocolate vine
Chufa
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Citron Melon
Clover
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Golden Dead Nettle
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Mountain ash (rowan)
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Nandina
Nasturtium
Natal plum
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Norfolk Pine
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Reindeer moss
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Saffron plum
Sandspur (sandbur)
Sassafras
Sawgrass
Saw palmetto
Seablite
Sea lettuce

Seaoat
Sea oxeye
Sea purslane
Searocket
Shepherd's purse
Silverhead
Silverthorn
Skunk Vine
Smartweed
Smilax
Soapberry and buffaloberry
Society Garlic
Sorrel
Sourwood
Sow thistle
Spanish Needle
Spiderwort
Spring beauty
Spruce
Spurge nettle and Texas Bullnettle
Star fruit
Stinging nettle and Heartleaf Nettle
Stork's Bill
Strawberry
Sugarberry (hackberry)
Sugarcane
Sumac

Sunflower
Sweetbay
Sweetclover
Sweetgum
Sweet Potato Leaves
Swinecress
Sword fern (Boston fern)
Sycamore
Tape Seagrass
Tea
Tiger Lily
Tindora (ivy gourd)
Trillium
Tropical almond
Tuberous Sweetpea (earthnut pea)
Tuckahoe (arrow arum)
Tulip
Tuliptree (yellow poplar)
Tupelo
Usnea (beard lichen)
Viburnum
Violet
Watercress
Water hyacinth
Wax myrtle
Western Tansymustard
West Indian Chickweed

White Indigo Berry
Wild apple (crab apple)
Wild carrot
Wild cherry
Wild Fennel
Wild fig
Wild garlic, wild onion, and ramps (Wild Alliums)
Wild grape
Wild lettuce
Wild mint
Wild mustard
Wild plum (Chickasaw plum)
Wild pumpkin (Seminole Pumpkin)
Wild radish
Wild rice
Willow
Winged yam
Wisteria
Yaupon Holly
Yellow pond-lily
Yellow thistle
Yucca

Glossary

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Foreword

If you take any of my foraging classes, you know I'm fond of saying we got along for a long time without nutritionists (or botanists). So why write about mostly wild plants and nutrition? One reason was suggested by a 1951 study: a remedial diet. You might have a recognized nutritional shortage and want to know what plants could remedy that. Another is insight into ancestral eating and why our ancestors usually did not have a lot of diet-related health issues. There is also the wider question of why eat any wild plant? There are several arguments that are contingent on your interests.

One issue is the quality and delivery of modern food. When you eat a ripe mulberry off a tree, for example, the “chain of contamination” is extremely low, most likely none. The amount of environment-damaging travel that berry had to go through to get from where it grew to your mouth is minimal. Very little energy was spent transporting that mulberry to you, and its carbon impact was negligible. No packaging was involved, as well as no labeling, no advertising, and no genetic tinkering. The fruit was fresh, the costs low, its nutrients in peak condition, and the delivery was timely if not assured—you weren't dependent on others for that mulberry. You also have the satisfaction borne of competently being able to independently provide your own food.

Another answer is wild plants tend to pack more nutrients—and flavor—than their cultivated brethren. They are not protected or

pampered like commercial crops. They have to take care of themselves, and they do that by making a variety of beneficial chemicals. Wild edibles also offer unique combinations of flavors, textures, not to mention nutrients. They can be quite good for you; after all, they kept our ancestors alive. Humanity survived for a long time without chemists in the kitchen creating fake food and additives or putting a multitude of chemicals on our food plants.

Wild edibles are also versatile; not only can they meet everyday needs, but they can also help address specific nutritional needs. For example, about a dozen plants have Vitamin B12, an important nutrient for vegans and vegetarians (and one highlighted in this book). Other plants contain a good deal of iron, and premenopausal women might need more iron in their diet.

Perhaps the most common nutrient mentioned in this book—which covers plants that most modern folks don't eat—is potassium. It's probably not a coincidence that some 95% of American adults are deficient in potassium. Similarly, magnesium is a common nutrient in wild plants, but many Americans are deficient in magnesium. The long-term effects of such deficiencies are serious: minor problems begin to accumulate, and they can become major issues over time. People in the past sometimes had serious nutritional deficiencies—whether from outright famine or deficiencies that led to conditions like pellagra (niacin deficiency), rickets (vitamin D deficiency), or beriberi (thiamine deficiency)—but most ancient illnesses came from infections and diseases, not diet. Today, many of the most prevalent illnesses stem largely from diet, not infections or communicable diseases. This suggests our

modern diet is detrimental. Our very existence proves that ancestral eating worked. It was seasonal, sufficient, varied, and provided nutrients regardless of where you were on Earth or what the native diet was.

A 1999 study estimated that some 10% of weeds and wild plants are suitable for food, depending on where you live—more in some places, less in others, and with seasonal variations. One reason why animals moved, and hunter-gatherers followed them, was seasonal changes in plants. One might argue that foraging is knowledge lost to farming. Eating wild is in our genes, and it can be healthy fun. Foraging is treasure hunting for adults. Enjoy.

Green Deane

Introduction

How This Book is Organized

This book is organized alphabetically, by each plant's common name. Some accounts pertain to a genus of plants, whereas others focus on individual species. Because common names can vary, we've included an index of scientific names, as well as a separate index for common names (see page 342).

How to Use This Book

Start by reviewing the front matter carefully, especially the advice on foraging safety, toxic plants, and etiquette. Consult the chart ([pages 16–43](#)) to learn about each plant's main benefits. When you're identifying plants, always be sure to use multiple resources—an expert's advice is a great option—and keep in mind that plant appearances can differ greatly, depending on conditions. When it comes to safety, we've highlighted the known safety issues for each plant, to the best of our knowledge. Nonetheless, be advised that many of the plants in this book are understudied and the scientific literature is incomplete on the subject. Enjoy wild plants, but do so deliberately and prudently. You're responsible for your own safety.

The Many Benefits of Foraging

Foraging offers, besides sustaining calories, different flavors, textures, and compliments of nutrients. Foraging provides plants that haven't been genetically modified or treated with chemicals as is most food today. There's no chemist in the kitchen other than Mother Nature herself. Foraging is a productive and enjoyable way to get out in nature.

Geographic Range of the Book

This book primarily focuses on the Americas, and North America in particular. Many of the edible plants in this book originate from Eurasia and were introduced by the settlers, colonizers, and explorers of the last 500 years, affecting everywhere from India, China, and Australia to the Americas and Africa. Thus, in a larger sense, many of the species in this book are found around the world. (Some of the plants can even be found in the Arctic Circle.)

Botany

What of botany? Many people don't like to learn the botanical/scientific names of plants, which is understandable. Humanity got along for a long time without botanists or nutritionists. Your mother said, "This plant is edible," and no botanical names were needed, and she knew it was good for you. Knowing the nutritional composition of plants now helps one counter the dietary poverty found in heavily processed and modified foods.

One reason to learn the botanical names is that it increases the likelihood that two people are referring to the same plant—particularly in correspondence or across the internet. Occasionally, the botanical name includes worthwhile information, such as a physical description or preferred environment (for example, most plants with *palustris* in the name like swampy areas). One problem with botanical names is that nowadays they are often changing because of genetic testing and DNA barcoding—this is particularly true with mushrooms. Latin was chosen for botanical names, as no population speaks Latin as a native tongue; the language, therefore, doesn't change much organically. Another advantage of botanical names is that each plant has only one botanical name, whereas a plant can have many common names, including different names in different regions. I know of a *Lippia* species that is called fog fruit, Frog Fruit, Turkey Trot, carpet weed, and Match Head. I am constantly surprised by the number of common names a plant can

have. Common names can also get reused: There are also some 18 “pig weeds” in North America, half a dozen “Indian potatoes,” and many “hog plums.” Capricious common names can be confusing.

A Common Mistake to Avoid

A mistake I see beginners often make is they try to make a plant fit the description of what they are after, ignoring or overlooking small details. Although I often criticize botanists, they usually describe plants well; one should never ignore descriptive details, and never “force” an identification, as that’s a potentially dangerous thing to do.



This is why you don’t force an identification. Canada moonseed, which is toxic, can grow right alongside wild grapes.

Another shortcoming of beginners is they consistently fail to notice how a leaf attaches to a stem. This fundamental descriptor is often overlooked and leads to misidentification. Are the leaves

opposite each other, on opposite sides of the stem making a pair?
Or do they alternate on the stem?

One way to reduce identification problems is to have a study partner, especially someone with more foraging experience or botanical training. It is unlikely both of you will make the same observational mistakes or will overlook the same detail.

An Unsettled Science

Botany is not a settled science. Research is ongoing, new discoveries are constantly being made, and old mistakes are being corrected (hopefully). It is easy to understand why. The first method of gathering information was by what we could see with the unaided eye, called macro (or morphological) identification. Then the microscope expanded accuracy; we could call it micro identification. And now there is genetic testing. As an example, in about 2005 a new mushroom appeared in Florida, having never been reported before in the state. As it began to appear over the entire state at about the same time, the presumption was that it wasn't released by humans but rather brought by a hurricane. (Atlantic Hurricanes start their journeys off the African coast.) What's more, the new mushroom looked like a common one in Africa. The new mushroom was classified according to its morphology and its microscopic characteristics. The researchers got the genus right, but genetic testing nearly a dozen years later showed that the species was from Australia, a much bigger geographic leap than from Africa. Without genetic research,

researchers likely wouldn't have discovered its true origin. I tell myself that it's good every time a plant's title is changed, and I have to remember another new Latin name. (A local edible mushroom has had three official names in as many years; mycology is another field in a sort of naming upheaval because of genetic "barcoding.") Happily, macro-level features work well for our purposes, as most foraged plants are well-known. Most genetic testing of green plants is now done to sort out past botanical mistakes (some of them ego-driven).

Basic Plant Anatomy

Every plant has a scientific name, usually some form of Latin or Latin-mangled Greek. The first part of the name is the genus (or group) the plant is in, the second part is that particular plant's individual name. Consider the longleaf pine, *Pinus palustris*. *Pinus* is the group name; the individual name is *palustris* (which in this case means wet or swampy). In an ideal world, a scientific name would tell you something useful about the plant; the longleaf pine's name suggests it'd grow in wet areas. In this case, the tree is misnamed: it likes dry conditions.

A poor descriptor is not enough to change a plant's name. The reason has to pertain to its relationship to other plants; this is one reason (aside from genetic testing) why botany is not a settled science.

As research progresses and findings from the field (notably DNA sampling) add to our knowledge, plant taxonomic names, in particular, are subject to revision. This process is similar to that seen in other biological fields (e.g. mycology).

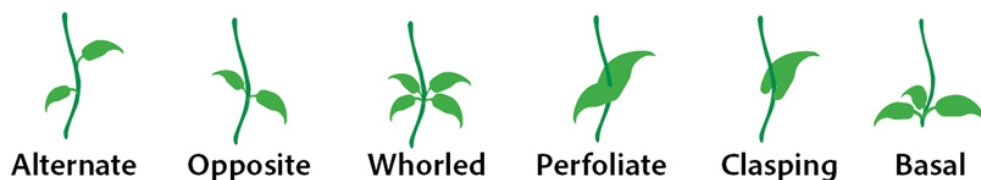
Plants are Chemical Factories

To put it simply: plants are chemical factories, and making chemicals requires energy—that's what leaves do—they make energy, and roots often store that energy. This is why many plants have a two-year (biennial) cycle: they make and store energy in the first year, then they use that energy the next year to make seeds or

fruit to reproduce. Over time, an individual plant's leaves become fine-tuned to their location and the plant's needs. In rainy areas, leaves tend to be large, enabling the plant to collect as much sunshine as possible when it shines, and its leaves are pointed to help water disperse. In drier areas, leaves tend to be waxy or fuzzy to reduce water loss.

Leaf Basics

Usually, a leaf is a single blade with a stem (a petiole) attached to a plant's stalk (which is essentially the plant's trunk). But there are many other leaf types. Leaves can be stemless and attach to the stalk directly (clasping). Compound leaves have leaflets that radiate out, like fingers from a hand. Pinnately compound leaves have leaflets that follow the midrib of a leaf. Leaves can also cluster at the base; this is called a basal rosette (as seen in plantains and dandelions). Other plants can have smaller whorls higher up on the stalk; for example, this is common with goosegrass, [page 99](#)). And, of course, in cacti, the spines are modified leaves, and the plant's green skin produces energy. Similarly, the light-colored rings on Australian pine needles are actually the leaves.



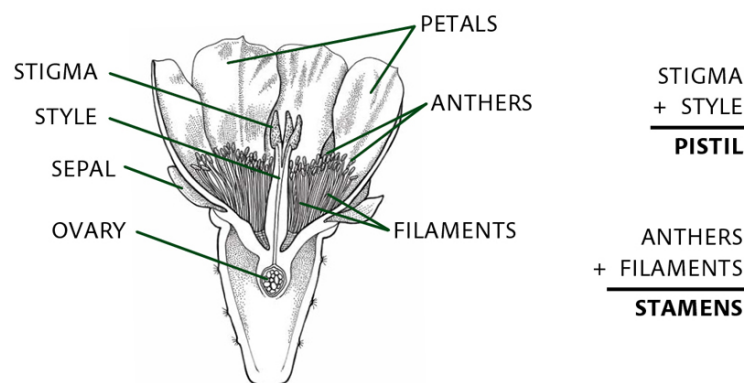
Leaf arrangement on the stem can vary, as can leaf shape. Studying leaf attachment, shape, and leaf veins are all important

when identifying plants. Ask yourself: Is the leaf on the opposite side of a stem? Or do the leaves occur alternately? And what about leaf shape? Where is the leaf the widest? The top? The middle? The bottom? Are the veins obvious? Do they terminate at the tips of the teeth or between the teeth? Some leaves have veins that resemble a road map; others can have veins that are parallel. Consulting with a thorough field guide to your area is a great way to familiarize yourself with the many different variations you're bound to encounter.

Flower Anatomy

Most plants produce flowers, followed by seeds protected in fruit; those that do are known as angiosperms. Most flowering plants have male and female organs on the same plant, but some plants have male and female blossoms on separate plants. Other plants, known as gymnosperms, don't technically flower at all and spread unprotected seeds. Conifers are familiar examples of gymnosperms.

PARTS OF A FLOWER



While we often think of a flower as a single thing, flowers have several different components. Flower petals are modified leaves that help a plant attract pollinators. And what often appears to consist of extra petals are often sepals, which support and protect a flower bud as it forms. When sepals resemble a blossom's petals, they are called tepals. For instance, the daylily can have three petals and three "tepals," all the same color and size, so one might think the blossom has six petals. However, petals usually grow inside the blossom structure, and sepals/tepals grow on the outside. For example, the large colorful parts of the Christmastime favorite, the poinsettia, are actually sepals, not petals: the sepals are large and red, and the petals themselves are white and usually so small as to go unnoticed. Another example: horsemint has small, white petals with maroon dots. The sepals are large and bright pink at certain times of the year, to attract insects.

At the center of the flower is the pistil, the female part of the flower, which houses the ovaries and produces ovules. The stamen is the male portion of the flower, and its anther produces pollen, often on a filament. When grains of pollen land on the stigma, a pollen "channel" forms, transferring the pollen to the ovules, so the plant becomes pollinated and seeds develop.

Flower Shape

Flower shape can vary as much as leaf type or arrangement.

A simple flower often has four rings of construction, the aforementioned sepals are the outermost ring and protect the

blossom (remember, if they resemble petals, then they are called tepals). Buds open to reveal true petals. Novices often forget to count the number of petals on simple flowers. Three, four, five, or six petals are common. The arrangement of the petals is important too. A hibiscus does not look like a rose, which does not look like a pea nor a mint. The petals have different colors, shapes, and arrangements to attract different pollinators. Sometimes, the plant-insect relationship can be quite specific—a plant may depend on only one species for successful pollination.

Blossoms can be radially symmetrical (if you cut them in half, each half will look the same). Or they can be bilaterally symmetrical, with tubular blossoms (to accommodate certain insects, such as sphinx moths or hummingbirds). Pea blossoms have four petals, but two are fused, so the arrangement is called wings and keels.

Flowers in the sunflower and daisy family (Asteraceae) are actually composite: they are composed of many ray-like tubular florets, with each one creating a seed.

And lastly, some flowers can be irregularly shaped. This is common with buttercups, which often have petals of differing sizes and symmetry.

Flower Clusters

Adaptations that give a species a survival advantage often persist; this is one reason why flower clusters vary widely. Generally speaking, such adaptations enable pollinators to visit several

blossoms in one trip. There are many different types of flower clusters. Examples include spikes, umbels, panicles, racemes, catkins (on trees), or the spadix seen on jack-in-the-pulpit. Additionally, blossoms often open from the bottom up, extending the time the blossoms can be pollinated.



Flat



Round



Spike

Seeds

No matter how stressed a plant is, if it has the energy to blossom, the flower will look correct and fresh, making positive identification easier. (The rest of the plant may still look ratty.) Seed production varies dramatically by species. Some produce only a few seeds; others, such as maples, produce thousands of seeds. Sometimes, plants produce capsules or seedpods.

The resulting seeds might be designed to be dispersed by wind, insects, or rodents or other mammals.

Indeed, many plants have a ripening strategy that maximizes dispersal of their seeds. For example, persimmon fruits are bitter until the seeds are mature enough to germinate, then the fruit turns sweet. One could say the persimmon “wants” its seeds distributed by animals that can taste sweet, but not by animals that can’t, such as cats. (Perhaps the digestive system of the cat ruins persimmon seeds.) Similarly, pond lily seeds are bitter until they are ready to

germinate, which coincides with when they drop off the plant and float downstream.

Fruit

While the general concept of “fruit” is familiar, the actual botanical definition is a bit tricky. Technically speaking, when a flower’s ovary ripens, we call the end result a *fruit*. Fruit contains seeds, as well as fleshy material that enables the seeds to persist in the environment long enough to give the seeds a chance to germinate. Examples of **simple fruits**—where one flower produces one fruit—include apples, grapes, oranges, and, yes, the tomato (though that’s largely a technicality). There are different terms for various kinds of simple fruits. **Pomes** (e.g., apples) are simple, fleshy fruits with seeds in a papery center. Cherries are a famous example of **drupes**—fruits with a hard pit (seed) at the center. **Berries** are simple fleshy fruits with seeds and pulp, but not everything we call a berry (e.g., a strawberry) is botanically one.

As it happens, some fruits are a bit more complicated. Some plants produce fruits from a cluster of flowers instead of one. The pineapple is a well-known example of such a “**multiple**” fruit. Still other plants have “**aggregate**” fruits—fruit that results from multiple ovaries ripening and merging. Examples include raspberries, blackberries, and mulberries.

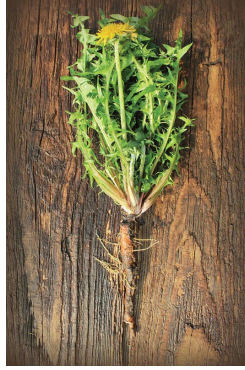
Roots

Roots also vary considerably. Generally speaking, roots can grow down or out; those that grow down are called taproots; those that spread horizontally are called rhizomes. In addition to anchoring the plant, roots absorb water and dissolved minerals from the soil.



A mint plant and its creeping rhizomes

The first root a plant makes from a seed is the primary root. It grows downward, and another root, the taproot, grows from that. Some plants use a taproot to store food (energy), like carrots or turnips. Grasses and other single-leaf young plants have a fibrous root system, a mass of roots all about the same size, growing from the base of the stem. Spiderworts and pine trees have taproot systems. Horizontal roots, such as the cattail's, are called rhizomes. Some plants have what are known as corms: swollen bases that resemble onions.



Dandelion taproot

Some Examples

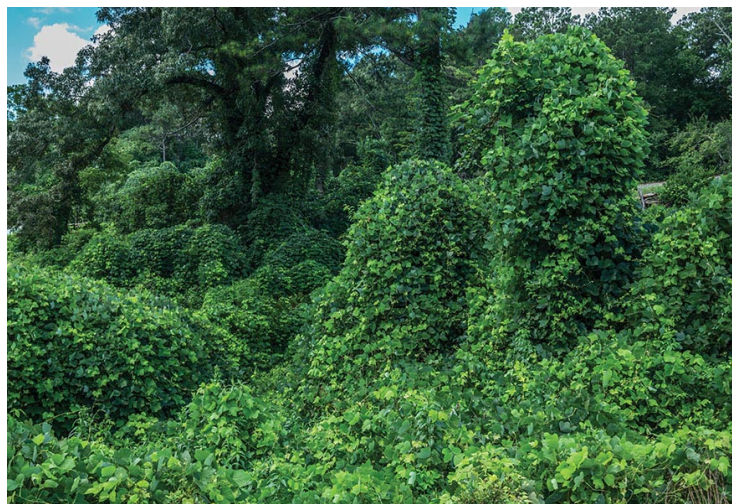
Pine trees have roots that grow straight down, while oaks have roots that grow out. This is why pines break in high winds and oaks fall over, like stools. Among foraging targets, roots can be as large as a 2-liter soda bottle, the size of your thigh, or shaped like a hairy softball. Some are shaped like walnuts, others like eggs; a few resemble lumpy potatoes or carrots. Some roots, like kudzu, require too much hard labor to process; in other words, you'll burn more calories preparing it than you'll get for your effort. Other roots are a much better option: true thistle roots, for example, are edible raw or cooked. In that case, all one really needs is a shovel.



A toppled oak and its network of spreading roots

Invasive Species and Introduced Ones

Of course, some species are more regional and limited by climate, geographic barriers, or specific environments. In most cases, the ranges for native plants are well-established. Often, when a plant is introduced (purposely or accidentally), it becomes “invasive” and outcompetes native plants in the new area because the birds, insects, fungi, and other organisms that once held its population in check are not present in the new region.



Kudzu is an infamous invasive species.

Sometimes a valuable plant is considered “invasive” because it takes resources away from agricultural crops, thereby increasing the cost of growing them. (Some botanists are employed in the business of killing weeds in commercial crops.) A few years ago, I looked at the top 10 invasive species in a particular Southern state, and seven of the “weeds” were edible.

Invasive Can Be a Loaded Word

Sometime a plant was introduced as a human food and/or animal fodder and another crop superseded it. Crabgrass is a good example. It was intentionally introduced in 1849 but was eventually replaced by corn. The evening primrose is called a “lost vegetable.” Evening primrose was widely cultivated in Europe and then popularized among settlers in North America. Today, there is a debate whether it’s native to North America or Europe.

The history of other plants can be murky too. Canna is another root vegetable whose native range has long been debated; begonias are another case, with claims they are native to Brazil ... or China.

There is a very common fern in Florida that is native to Nepal ... or ... perhaps Africa, and today there is a yam in the same predicament.

Even what is native is up for debate. Plants that were in a given location before 1492 (the era of Columbus) are considered native. This selectively excludes plants moved around by Indigenous populations before that time period.

And despite all our technology and knowledge, modern botany is not a settled science. DNA testing has thrown many branches of science into disarray, leading to new taxonomic names, which admittedly are a pain to memorize. Happily, knowing a plant on sight is far more important than knowing the latest taxonomic name for it.

Know Your Local Foraging Laws and Rules

Before you go foraging, make sure you are aware of your local foraging laws, which are not unlike hunting laws, except they're more arbitrary. Foraging in some countries is quite legal but not in others. In the United States, for example, foraging is usually illegal on public land, such as parks and other green spaces. There are possible exceptions on federal lands where an inexpensive permit can make harvesting certain species legal. Also, before you collect on private land, you need to obtain permission from the landowner. Always ask before you collect.

The Most Important Foraging Rule: “When in Doubt, Throw It Out”

When foraging, one of the best tips is this: Learn your area's toxic species first, especially those that are superficially like sought-after or edible species. In such cases, it's best for novices to avoid plants with toxic “lookalikes” until gaining a significant amount of real-world experience identifying wild plants. The famous saying from the mushroom-foraging world is applicable to all plants: “When in doubt, throw it out.”

Deane's Recommended Plants for Novices

When I hike the Appalachian Trail, I see a lot of folks who one would think would be interested in wild food, but no. Apples are one beginner food I often see ignored. Whether big and sweet or small and bitter, wild apples are more than a nibble, they can be a staple, eaten out of hand or roasted. Apples have been consumed for some 7,000 years and most folks know what they look like. There were at least eight different wild apple trees near where I grew up in Pownal, Maine, and they ranged from large, sweet yellow ones to small, bitter green crab apples. They were a common wild tree where one could find game animals (they like apples too).

Another good starter plant I see on the trail is the blueberry. Blueberries are a late-spring-to-fall fruit—depending upon where you live and your elevation. The stem attaches to one side of the fruit, and on the opposite end is a “false crown,” making the berries easy to identify. The number of seeds per berry helps to identify which genus you have.

Wild strawberries are familiar to most people. Strawberries and blueberries usually don't grow side-by-side, as they don't like the same environments. Wild strawberry season is usually quite short, about a month, so you have to be looking for them (usually in tall grass).

Any list of foraging plants for beginners must include the well-known dandelion. It's found on all continents except Antarctica. All parts are edible, and it has been used as a food for thousands of years. It was among the first wild greens I was sent out to collect for supper when I was a kid. When I first made wine in the eighth grade, I used dandelions.

Another flower I would add to the beginner's list is chicory; it is basically a blue daisy. On the bitter side in terms of taste, it is a foraging target that is easy to identify.

A native of India found nearly everywhere in the world is purslane. Seeds hike on footwear or vehicle tires and get carried into the wilderness. I've seen it uneaten on top of Roan Mountain, on the Appalachian Trail, in eastern Tennessee.

Unfortunately, beginners tend to be intimidated by trees. Among all plants, trees are the easiest to learn because they don't change quickly and last a long time. So one can study them easily, for hours, if not years. One group that is quite helpful to know are the pines, that is, plants in the *Pinus* genus. Important: There are several plants that, though they are called pines, are not pines (screw pine and Australian pine, for example). But if your tree is in the genus *Pinus*, it is usable. The needles can be used for tea with vitamin C and contain shikimic acid (good against viruses and used in the production of the well-known antiviral drug Tamiflu). Young cones—male and female—can be eaten, as well as the cambium (inner bark).

Among trees, I'd also recommend mulberries. If you see a large-leafed tree with fruit that looks like overgrown blackberries,

you have a mulberry. White mulberries have pink, blackberry-like fruit.

Of course, no list of easy edibles would be complete without cattails. While surprisingly common in eastern North America, they are not a worldwide find. Difficult to misidentify, the greatest problem with cattails is knowing whether the water they grow in is polluted. Cattails are mild in flavor. If your cattail has a strong flavor, you probably have made a mistake and are eating an inedible species, an iris. See [page 90](#) for details.

One should add there are no toxic mustards. All wild members of this family are edible around the world. The blossom will be shaped like an X or an H with six stamens: four short and two long. Also, if a plant looks like an onion or garlic and also smells like an onion or a garlic—that is, it has both looks and aroma—it is edible.

All non-savory mints are edible too (think the mint found in Girl Scout cookies, but not that of wild sages, which can be iffy).

DEANE'S RECOMMENDED PLANTS FOR NOVICES

[Blueberries, page 78](#)

[Cattails, page 90](#)

[Dandelions, page 111](#)

[Mulberries, page 201](#)

[Pines, page 225](#)

[Purslane, page 232](#)

[Strawberries, page 273](#)

Wild apples, page 307

Wild mint, page 317

Wild mustard, page 318

Deane's Recommended Survival Foods

Survival is a different goal than your average foraging; in a survival situation, your goal is simple: take in more calories than you expend. In a survival situation, there are some unyielding facts: There are only so many hours of daylight, and only so many hours of good weather. Other variables include your health, injuries, insects, and plant problems (disease, drought, frost, destructive animals, etc.).

I used to do what I call “Foraging Weekends,” when I’d float down a river and eat only what I could catch or forage. No doubt this is why traps were invented: They work while you’re sleeping, thus extending your day. My typical survival foraging goal is to go from a caloric staple to another caloric staple and then collect incidental plants in between. So locally I’d collect yam roots, then thistle roots, and then I’d collect whatever edible greens I saw while changing locations. That maximized my calorie intake. Other starchy survival foods include cattails and, if you have the time and materials, acorns. Nothing produces more starch per acre than cattails, more than 6,000 pounds per acre. (Note, however, that the acid in acorns must be washed away. See [page 45](#).) Depending upon the time of year and location, nuts and fruits are also caloric staples. Examples include hickory nuts and apples, or persimmons. Small fruits are often found in the spring, such as blueberries, plums, cherries, and strawberries.

Another widespread edible root is the groundnut, *Apios americana*. They are very easy to identify, high in protein, and found in most stream banks. I would add American lotus seeds (and roots, but they can be energy-consuming to find). Other edible roots include dandelions, chicory, evening primrose, and the spurge nettle, which tastes like pasta. The winged yam and coconuts are more warm-climate foods, but no less important.

Wild rice is a good source of calories, if it grows in your area, as is the misnamed barnyard grass, and Eastern Gamagrass. (There are no toxic grasses native to America, but many imported grasses are toxic or can be made so by the weather.) The seeds of the bunya bunya tree are a limited, but excellent, survival food and so are Norfolk Pine cones.

DEANE'S RECOMMENDED SURVIVAL FOODS

[Acorns, page 45](#)

[American lotus seeds, page 52](#)

[Barnyard grass, page 59](#)

[Cattails, page 90](#)

[Chicory, page 95](#)

[Dandelions, page 111](#)

[Eastern Gamagrass, page 117](#)

[Groundnuts, page 150](#)

[Norfolk Pine cones, page 205](#)

[Spurge nettle, page 268](#)

Wild rice, page 323

Toxic Plants: Hemlock, Pokeweed, and More

One problem with toxic plants is that with the right preparation, some are edible. Pokeweed (*Phytolacca americana*) is a prime example. If prepared incorrectly, a chemical in the plant destroys the mucus protecting your digestive tract, and thus the acid in your stomach begins to eat you. Minuscule amounts of the root are known to be deadly. There are also many toxic plants that cannot be made edible.

Plants in the carrot family (Apiaceae) are probably among the most toxic and misidentified plants. There are quite a few poison hemlocks (Coniums) or water hemlocks (*Cicuta*). Both green plants have no relation to hemlock trees. Statistically, if one removes wild mushrooms from the discussion, water hemlock kills more intentional foragers than any other species, with about one case per decade. It destroys GABA, which is a neurotransmitter. There is no antidote other than getting one's stomach pumped out immediately (within 20 minutes at the latest). Sometimes folks looking for elderberries (*Sambucus canadensis*) mistakenly pick water hemlock (*Cicuta mexicana*). Their resemblance is very superficial, but they both like growing in wet areas. Other carrot family members to avoid are the giant hogweed (*Heracleum mantegazzianum*) and cow parsnip (*Heracleum maximum*).

Anyone collecting watercress (*Nasturtium officinale*) must make sure they haven't collected any young water hemlock. Raw

watercress can also spread giardia.

Another common plant that can kill you is the moonseed, *Menispermum canadense*. It is found in many areas and the entire plant is toxic. Unfortunately, it is also called the “yellow perilla,” which might make some think it is edible, as some edible plants are called perilla. That is yet another reason to be familiar with a plant’s botanical name.

In my foraging classes I tell my students to avoid the pea/legume family unless they know the plant very well and that it is also edible. The pea family can be quite toxic; as we are used to eating various peas and legumes, people often let their guard down. A hiker in South Carolina recently died from eating *Sesbania vesicaria*, also called bagpod. He ate it while hiking one afternoon, and he died a few days later.

It is wise to avoid ornamental plants, as they are often used in landscaping precisely because they are toxic and creatures leave them alone. The most common instance of poisonings in the United States are toddlers eating ornamental plants in their yard, or their neighbor’s yard, which is a good reason to have edible landscaping. A good example is the azalea (*Rhododendron*), which has been killing people since Roman times. (When the Romans landed on Rhodes, the Greeks failed to tell them the pretty plants everywhere were deadly.) Six to eight hours after consumption of an azalea leaf tea or a blossom, your blood pressure can drop to zero and stop your heart. Azalea honey is also toxic.

And then there are the old standbys of poison ivy (*Toxicodendron radicans*), its relatives poison oak (*Toxicodendron*

pubescens) and poison sumac (*Toxicodendron vernix*). People who say they are “immune” to poison ivy usually end up getting it. The scientific thinking is we are all born with a certain resistance to poison ivy, some more than others, and each exposure reduces the resistance. If you keep coming in contact with it, you will lose your resistance and get a bad case of it. If you know how hard bicycle chain grease is to wash off, so is urushiol, poison ivy’s offending oil. You should wash with a detergent (not a soap) and scrub the area with a cloth or the like. Also, never burn poison ivy, as the oil can be inhaled when burned (causing awful damage within the lungs).

Poison ivy is related to Brazilian pepper (*Schinus terebinthifolia*) whose toxicity is selective. Some people can eat the berries, whereas others can simply smell a broken leaf and get sick.

DEANE’S LIST OF TOXIC PLANTS

Azalea and ornamental plants, generally

Brazilian pepper, page 276

Cow parsnip

Giant hogweed

Moonseed, page 314

Pea/legume family, many

Poison hemlock, page 276

Poison ivy, page 276

Poison oak

Poison sumac, page 276

Pokeweed, page 229

Water hemlock, page 119

Staying Safe

One way to stay safe is to study with a local expert. Besides learning edibility, you also gain regional insight, such as preferred locations, time of year, and local growth variations. (Dandelions, for example, hate Florida and rarely resemble their relatives growing in northern locations.) One hint: No matter how stressed a plant is, if it has enough energy to produce a blossom, it will usually be true to form, even if the rest of the plant looks ratty.

Don't Field-test for Edibility

This was a huge lesson and why I do not teach so-called field-testing for edibility. In this case, I wondered if the blossoms of the tropical sage (*Salvia coccinea*) were edible. I did my research, and there were no glaring reports of toxicity. It has been exported for 400 years without a reported incident, and there was one medicinal reference. So one day I tasted a tiny bit of the blossom. It was peppery. I did not consume it. As I experienced no effects from testing it, the next day I ate a very small piece of the blossom. As if on cue, 40 minutes later, my head started spinning, my stomach turned, and I was ill for three weeks—mostly a damaged stomach. If I had been in an emergency situation, hunger would have been a far better condition to cope with than being incapacitated. Other people might not have that experience. I inherited a tender tummy from one grandmother, so my response could have been unique to me.

Which brings me to a main point: never eat a lot of a food that is new to you; try only a little, in case you have an unknown allergy to the species. This is why you shouldn't try two different "new" species in the same day. If you get ill, you won't know which one caused it.

Safety and Pollution

People often think plant identification is difficult; while it can have challenges, a far greater difficulty is ascertaining whether the soil or water is polluted. Generally speaking, it's best to assume water is polluted, and you should presume the same of vacant land. Keep in mind that pollution follows where the water and wind goes. For example, a pond at a lower elevation than a nearby parking lot is not a good place to forage, as all that pollution heads into the pond. Similarly, foraging downhill or downwind from interstates or highways isn't recommended, nor is foraging near railroad tracks. (The soil near interstates, in particular, can often have lead pollution from leaded gasoline before it was banned; sadly, the lead sticks around). By comparison, foraging uphill from a country dirt road is probably not a problem.

Also be aware of a plant's habitat. Certain aquatic plants easily take up toxic metals and are used to clean water. Some plants are unsafe if grown on agricultural soil, as they sequester nitrogen and therefore are better harvested from poor soil.

Notes on Consuming a New-to-You Edible Species

Allergic reactions can occur with wild plants and grocery-purchased plants alike. This is why it's important to only eat one new edible species a day. That way, if you have something like an allergic reaction, you will know which plant caused it. I have never been sick from misidentifying a plant.

Hard-Won Experience

I have been ill three times over the years from foraging, never from misidentification. One time the water was polluted where I was foraging for cattails. Another time, I consumed plants that had been sprayed by chemicals, and a third time I was experimenting, which I strongly do not recommend. I experimented knowingly and carefully and still got quite ill.

Harvesting Ethics and Etiquette

The ethics of foraging can be foggy. “Don’t take it all” is a good place to start. Plants have to reproduce, and someone (or something—an animal or an insect species) may be in greater need of the plant than you. Sometimes plants are rare or endangered; sometimes, the plant may be endangered nationally, or perhaps just in your area. Review your state’s lists of threatened/endangered plants before you head out.

Plants and Medicine

This book is a guide to identifying and foraging wild plants for the table. Wild plants certainly have myriad benefits when compared to the common Western diet, and wild plants were, and are, used for medicinal purposes. With that said, wild plants are not a replacement for medical care, and the purpose of this book isn’t to give medical advice or supplant a doctor’s visit.

Green Deane's Notable Nutrients

		VITAMINS		
		VITAMIN A	VITAMIN B1 (THIAMINE)	VITAMIN B2 (RIBOFLAVIN)
COMMON NAME	TAXONOMIC NAME			
Acorn	<i>Quercus</i> spp.			
Agave	<i>Agave americana</i>			
Alligator weed	<i>Alternanthera philoxeroides</i>			
Amaranth	<i>Amaranthus</i> spp.			
American beautyberry	<i>Callicarpa americana</i>			
American Black Nightshade	<i>Solanum americanum</i>			
American lotus	<i>Nelumbo lutea</i>			
Aronia (Black Chokeberry)	<i>Aronia melanocarpa</i>			
Aspen and poplar	<i>Populus deltoides</i> , <i>Populus tremuloides</i>	✓		
Australian pine	<i>Casuarina equisetifolia</i>			
Bacopa (water hyssop)	<i>Bacopa monnieri</i>			
Balloon vine	<i>Cardiospermum halicacabum</i>			
Barnyard grass	<i>Echinochloa crus-galli</i>			
Basswood	<i>Tilia americana</i>			
Beach Orach	<i>Atriplex cristata</i> , <i>Atriplex nuttallii</i>	✓		
Beech	<i>Fagus grandifolia</i>			✓
Begonia	<i>Begonia</i> spp.			
Betony	<i>Stachys</i> spp.			
Birch	<i>Betula</i> spp.			
Bird pepper	<i>Capsicum annuum</i> var. <i>glabriusculum</i>			
Biscuitroot	<i>Lomatium</i> spp.			
Bitter cress	<i>Cardamine</i> spp.			
Bitter Lettuce	<i>Launaea intybacea</i>			
Blackberry	<i>Rubus</i> spp.			
Black medic	<i>Medicago lupulina</i>			
Black walnut	<i>Juglans nigra</i>			
Bladder wrack	<i>Fucus vesiculosus</i>			
Blueberry	<i>Vaccinium</i> spp.	✓		
Bulrush	<i>Schoenoplectiella</i> spp., <i>Schoenoplectus</i> spp., <i>Scirpus</i> spp.			
Bunchberry	<i>Cornus canadensis</i>			
Burdock	<i>Arctium minus</i> , <i>Arctium lappa</i> , <i>Arctium tomentosum</i>			
Burnweed	<i>Erechtites hieracifolius</i>			
Butternut	<i>Juglans cinerea</i>			

COMMON NAME	TAXONOMIC NAME	TRACE MINERALS			
		POTASSIUM	SELENIUM	SODIUM	STRONTIUM
Acorn	<i>Quercus</i> spp.	✓			
Agave	<i>Agave americana</i>	✓			
Alligator weed	<i>Alternanthera philoxeroides</i>				
Amaranth	<i>Amaranthus</i> spp.	✓			
American beautyberry	<i>Callicarpa americana</i>				
American Black Nightshade	<i>Solanum americanum</i>				
American lotus	<i>Nelumbo lutea</i>	✓		✓	
Aronia (Black Chokeberry)	<i>Aronia melanocarpa</i>	✓			
Aspen and poplar	<i>Populus deltoides</i> , <i>Populus tremuloides</i>	✓			
Australian pine	<i>Casuarina equisetifolia</i>	✓			
Bacopa (water hyssop)	<i>Bacopa monnieri</i>				
Balloon vine	<i>Cardiospermum halicacabum</i>				
Barnyard grass	<i>Echinochloa crus-galli</i>	✓			
Basswood	<i>Tilia americana</i>	✓			
Beach Orach	<i>Atriplex cristata</i> , <i>Atriplex nuttallii</i>				
Beech	<i>Fagus grandifolia</i>	✓			
Begonia	<i>Begonia</i> spp.				
Betony	<i>Stachys</i> spp.	✓			
Birch	<i>Betula</i> spp.	✓			
Bird pepper	<i>Capsicum annuum</i> var. <i>glabriusculum</i>				
Biscuitroot	<i>Lomatium</i> spp.	✓		✓	
Bitter cress	<i>Cardamine</i> spp.	✓	✓		
Bitter Lettuce	<i>Launaea intybacea</i>				
Blackberry	<i>Rubus</i> spp.	✓			
Black medic	<i>Medicago lupulina</i>	✓			
Black walnut	<i>Juglans nigra</i>	✓			
Bladder wrack	<i>Fucus vesiculosus</i>	✓		✓	
Blueberry	<i>Vaccinium</i> spp.	✓			
Bulrush	<i>Schoenoplectiella</i> spp., <i>Schoenoplectus</i> spp., <i>Scirpus</i> spp.	✓			
Bunchberry	<i>Cornus canadensis</i>				
Burdock	<i>Arctium minus</i> , <i>Arctium lappa</i> , <i>Arctium tomentosum</i>	✓			
Burnweed	<i>Erechtites hieracifolius</i>	✓		✓	
Butternut	<i>Juglans cinerea</i>	✓			

		NUTRIENTS								OTHER COMPOUNDS OF NOTE							
SULFUR	ZINC	CARBOHYDRATES	FATS AND LIPIDS	FIBER	OIL	PECTIN	PROTEIN	STARCH	SUGAR	METHYL SALICYLATE	AMINO ACIDS	CAFFEINE	CAROTENOIDS (inc. beta-carotene, lutein, lycopene, zeaxanthin)	FLAVONOIDS, FLAVONOLS, AND POLYPHENOLICS	MELATONIN	OMEGA-3 AND 6 ACIDS	
		✓					✓										
		✓					✓						✓				
				✓			✓				✓						
													✓				
														✓			
							✓										
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														✓			
															✓		
																✓	
				✓			✓	✓	✓								
						✓											
		✓					✓						✓				

		VITAMINS		
COMMON NAME	TAXONOMIC NAME	VITAMIN A	VITAMIN B1 (THIAMINE)	VITAMIN B2 (RIBOFLAVIN)
Cabbage palm	<i>Sabal palmetto</i>			
Candyroot	<i>Polygala nana</i>			
Canna	<i>Canna</i> spp.			
Cattail	<i>Typha</i> spp.			
Che	<i>Cudrania tricuspidata</i>			
Checkerberry	<i>Gaultheria procumbens</i>			
Chickweed	<i>Stellaria media</i>	✓		
Chicory	<i>Cichorium intybus</i>			
Chinese tallow tree	<i>Triadica sebifera</i>			
Chinquapin	<i>Castanea pumila</i>			
Chocolate vine	<i>Akebia quinata</i>			
Chufa	<i>Cyperus esculentus</i>			
Cinnamon and camphor	<i>Cinnamomum verum</i> , <i>Cinnamomum camphora</i>			
Citron Melon	<i>Citrullus lanatus</i> var. <i>citroides</i>			
Clover	<i>Trifolium</i> spp.			
Common reed	<i>Phragmites australis</i>	✓		
Coral vine	<i>Antigonon leptopus</i>			
Crabgrass	<i>Digitaria sanguinalis</i>			
Cranberry	<i>Vaccinium macrocarpon</i>	✓		
Creeping cucumber	<i>Melothria pendula</i>			
Crowfoot grass	<i>Dactyloctenium aegyptium</i>			
Currant	<i>Ribes</i> spp. (nonthorny)			
Dandelion	<i>Taraxacum officinale</i>	✓		
Daylily	<i>Hemerocallis fulva</i>	✓		
Deerberry	<i>Vaccinium stamineum</i>			
Dock	<i>Rumex</i> spp.	✓		
Dollarweed	<i>Hydrocotyle umbellata</i>			
Duck potato	<i>Sagittaria</i> spp.			
Eastern Gamagrass	<i>Tripsacum dactyloides</i>			
Eastern Redbud	<i>Cercis canadensis</i>			
Elderberry	<i>Sambucus canadensis</i> , <i>Sambucus racemosa</i>	✓		
Elm	<i>Ulmus</i> spp.			
Evening primrose	<i>Oenothera biennis</i>			

VITAMINS							TRACE MINERALS									
VITAMIN B3 (Niacin)	VITAMIN B6 (Pyridoxine)	VITAMIN B9 (Folic Acid)	VITAMIN B12	VITAMIN C	VITAMIN E	VITAMIN K	BORON	CALCIUM	CHOLINE	COPPER	IODINE	IRON	LITHIUM	MAGNESIUM	MANGANESE	PHOSPHORUS
					✓			✓						✓		✓
				✓				✓				✓				✓
	✓					✓								✓	✓	
				✓				✓						✓		✓
						✓		✓						✓		✓
		✓		✓		✓		✓						✓		✓
				✓				✓						✓		
								✓						✓		✓
								✓				✓		✓		✓
				✓				✓						✓		✓
				✓				✓				✓		✓		✓
				✓				✓						✓		✓
								✓						✓		
								✓	✓							
				✓				✓						✓		
				✓	✓			✓								✓
				✓												✓
															✓	
				✓				✓								
					✓			✓				✓		✓		✓
				✓												
								✓						✓		
				✓												✓
								✓						✓		
					✓											
								✓								

COMMON NAME	TAXONOMIC NAME	TRACE MINERALS			
		POTASSIUM	SELENIUM	SODIUM	STRONTIUM
Cabbage palm	<i>Sabal palmetto</i>	✓			
Candyroot	<i>Polygala nana</i>				
Canna	<i>Canna</i> spp.				
Cattail	<i>Typha</i> spp.	✓			
Che	<i>Cudrania tricuspidata</i>	✓			
Checkerberry	<i>Gaultheria procumbens</i>	✓			
Chickweed	<i>Stellaria media</i>	✓		✓	
Chicory	<i>Cichorium intybus</i>	✓			
Chinese tallow tree	<i>Triadica sebifera</i>				
Chinquapin	<i>Castanea pumila</i>	✓			
Chocolate vine	<i>Akebia quinata</i>	✓			
Chufa	<i>Cyperus esculentus</i>	✓			
Cinnamon and camphor	<i>Cinnamomum verum</i> , <i>Cinnamomum camphora</i>	✓			
Citron Melon	<i>Citrullus lanatus</i> var. <i>citroides</i>			✓	
Clover	<i>Trifolium</i> spp.				
Common reed	<i>Phragmites australis</i>				
Coral vine	<i>Antigonon leptopus</i>				
Crabgrass	<i>Digitaria sanguinalis</i>	✓			
Cranberry	<i>Vaccinium macrocarpon</i>	✓			
Creeping cucumber	<i>Melothria pendula</i>			✓	
Crowfoot grass	<i>Dactyloctenium aegyptium</i>	✓			
Currant	<i>Ribes</i> spp. (nonthorny)	✓			
Dandelion	<i>Taraxacum officinale</i>	✓			
Daylily	<i>Heemerocallis fulva</i>	✓			
Deerberry	<i>Vaccinium stamineum</i>				
Dock	<i>Rumex</i> spp.	✓			
Dollarweed	<i>Hydrocotyle umbellata</i>	✓			
Duck potato	<i>Sagittaria</i> spp.	✓			
Eastern Gamagrass	<i>Tripsacum dactyloides</i>				
Eastern Redbud	<i>Cercis canadensis</i>				
Elderberry	<i>Sambucus canadensis</i> , <i>Sambucus racemosa</i>	✓			
Elm	<i>Ulmus</i> spp.				
Evening primrose	<i>Oenothera biennis</i>				

[illegible]

		VITAMINS		
		VITAMIN A	VITAMIN B1 (THIAMINE)	VITAMIN B2 (RIBOFLAVIN)
COMMON NAME	TAXONOMIC NAME			
False Hawk's-Beard	<i>Crepis japonica</i> aka <i>Youngia japonica</i>			
Feijoa (pineapple guava)	<i>Feijoa sellowiana</i>			
Fiddlehead fern	<i>Pteridium aquilinum</i> , <i>Osmunda cinnamomea</i>			
Fir	<i>Abies balsamea</i> , <i>Abies concolor</i>			
Firethorn	<i>Pyracantha coccinea</i>			
Fireweed	<i>Chamerion angustifolium</i>			
Flowering rush	<i>Butomus umbellatus</i>			
Fuchsia	<i>Fuchsia</i> spp.			
Garlic mustard	<i>Alliaria petiolata</i>			
Ginkgo	<i>Ginkgo biloba</i>	✓		
Glasswort	<i>Salicornia</i> spp.			
Goji berry	<i>Lycium barbarum</i> , <i>Lycium chinense</i>	✓		✓
Goldenrod	<i>Solidago</i> spp.			
Gooseberry	<i>Ribes</i> spp.			
Goosegrass	<i>Galium aparine</i>			
Gotu Kola	<i>Centella asiatica</i> , <i>Centella erecta</i>			
Goutweed	<i>Aegopodium podagraria</i>			
Ground-cherry	<i>Physalis</i> spp.	✓		
Ground ivy	<i>Glechoma hederacea</i>	✓		
Groundnut	<i>Apios americana</i>			
Hairy Cowpea	<i>Vigna luteola</i>			
Hardy orange	<i>Poncirus trifoliata</i>			
Hawthorn	<i>Crataegus</i> spp.			
Henbit and dead nettle	<i>Lamium</i> spp.		✓	
Hibiscus	<i>Hibiscus</i> spp.			
Hickory	<i>Carya</i> spp.			
Highbush cranberry	<i>Viburnum trilobum</i>			
Horsemint	<i>Monarda punctata</i>			
Horseradish	<i>Armoracia rusticana</i>	✓		
Horseweed	<i>Conyza canadensis</i>			
Huckleberry	<i>Gaylussacia</i> spp.			
Hyacinth	<i>Muscari</i> spp.			
Hydrilla	<i>Hydrilla verticillata</i>	✓		
Jerusalem artichoke	<i>Helianthus tuberosus</i>			
Jewels of Opar	<i>Talinum paniculatum</i>			

VITAMINS							TRACE MINERALS									
VITAMIN B3 (Niacin)	VITAMIN B6 (PYRIDOXINE)	VITAMIN B9 (FOLIC ACID)	VITAMIN B12	VITAMIN C	VITAMIN E	VITAMIN K	BORON	CALCIUM	CHOLINE	COPPER	IODINE	IRON	LITHIUM	MAGNESIUM	MANGANESE	PHOSPHORUS
				✓				✓						✓		
				✓				✓								
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COMMON NAME	TAXONOMIC NAME	TRACE MINERALS			
		POTASSIUM	SELENIUM	SODIUM	STRONTIUM
False Hawk's-Beard	<i>Crepis japonica</i> aka <i>Youngia japonica</i>				
Feijoa (pineapple guava)	<i>Feijoa sellowiana</i>	✓			
Fiddlehead fern	<i>Pteridium aquilinum</i> , <i>Osmunda cinnamomea</i>	✓			
Fir	<i>Abies balsamea</i> , <i>Abies concolor</i>	✓			
Firethorn	<i>Pyracantha coccinea</i>				
Fireweed	<i>Chamerion angustifolium</i>			✓	
Flowering rush	<i>Butomus umbellatus</i>				
Fuchsia	<i>Fuchsia</i> spp.	✓		✓	
Garlic mustard	<i>Alliaria petiolata</i>	✓			
Ginkgo	<i>Ginkgo biloba</i>	✓			
Glasswort	<i>Salicornia</i> spp.	✓		✓	
Goji berry	<i>Lycium barbarum</i> , <i>Lycium chinense</i>	✓			
Goldenrod	<i>Solidago</i> spp.				
Gooseberry	<i>Ribes</i> spp.	✓			
Goosegrass	<i>Galium aparine</i>	✓			
Gotu Kola	<i>Centella asiatica</i> , <i>Centella erecta</i>	✓			
Goutweed	<i>Aegopodium podagraria</i>	✓			
Ground-cherry	<i>Physalis</i> spp.				
Ground ivy	<i>Glechoma hederacea</i>				
Groundnut	<i>Apios americana</i>				
Hairy Cowpea	<i>Vigna luteola</i>				
Hardy orange	<i>Poncirus trifoliata</i>				
Hawthorn	<i>Crataegus</i> spp.				
Henbit and dead nettle	<i>Lamium</i> spp.	✓			
Hibiscus	<i>Hibiscus</i> spp.	✓			
Hickory	<i>Carya</i> spp.	✓			
Highbush cranberry	<i>Viburnum trilobum</i>				
Horsemint	<i>Monarda punctata</i>				
Horseradish	<i>Armoracia rusticana</i>	✓		✓	
Horseweed	<i>Conyza canadensis</i>	✓			
Huckleberry	<i>Gaylussacia</i> spp.				
Hyacinth	<i>Muscari</i> spp.				
Hydrilla	<i>Hydrilla verticillata</i>	✓			
Jerusalem artichoke	<i>Helianthus tuberosus</i>	✓			
Jewels of Opar	<i>Talinum paniculatum</i>	✓			

NUTRIENTS										OTHER COMPOUNDS OF NOTE									
SULFUR	ZINC	CARBOHYDRATES	FATS AND LIPIDS	FIBER	OIL	PECTIN	PROTEIN	STARCH	SUGAR	METHYL SALICYLATE	AMINO ACIDS	CAFFEINE	CAROTENOIDS (inc. beta-carotene, lutein, lycopene, zeaxanthin)	FLAVONOIDS, FLAVONOLS, AND POLYPHENOLICS	MELATONIN	OMEGA-3 AND -6 ACIDS			
		✓		✓			✓												
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	✓		✓				✓	✓											
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		VITAMINS		
		VITAMIN A	VITAMIN B1 (THIAMINE)	VITAMIN B2 (RIBOFLAVIN)
COMMON NAME	TAXONOMIC NAME			
Juneberry	<i>Amelanchier arborea</i> , <i>Amelanchier alnifolia</i>			
Juniper	<i>Juniperus</i> spp.			
Kelp	<i>Alaria esculenta</i> , <i>Alaria marginata</i>			
Knotweed	<i>Polygonum cuspidatum</i>			
Kochia (burning bush)	<i>Bassia scoparia</i>			
Kudzu	<i>Pueraria montana</i> var. <i>lobata</i>			
Labrador tea	<i>Ledum groenlandicum</i> , <i>Ledum palustre</i>			
Lamb's-quarter (goosefoot)	<i>Chenopodium</i> spp.	✓		
Lantana	<i>Lantana camara</i>			
Laver (nori)	<i>Porphyra</i> spp.			
Lemon Bacopa	<i>Bacopa caroliniana</i>			
Lemongrass	<i>Cymbopogon citratus</i>			
Litchi Tomato	<i>Solanum sisymbriifolium</i>			
Loquat	<i>Eriobotrya japonica</i>	✓		
Mahoe and milo	<i>Hibiscus tiliaceus</i> , <i>Thespesia populnea</i>			
Mangrove	<i>Rhizophora mangle</i> , <i>Avicennia germinans</i>			
Maple	<i>Acer</i> spp.			
Marigold	<i>Tagetes</i> spp.			
Maypop	<i>Passiflora incarnata</i>			
Mesquite	<i>Prosopis</i> spp.			
Milkweed	<i>Asclepias syriaca</i>	✓		
Miner's lettuce	<i>Claytonia perfoliata</i>			
Mock (Indian) strawberry	<i>Potentilla indica</i>			
Monkey puzzle tree	<i>Araucaria araucana</i>			
Moringa	<i>Moringa oleifera</i>	✓		
Morning glory	<i>Ipomoea</i> spp.	✓		
Mountain ash (rowan)	<i>Sorbus americana</i> , <i>Sorbus aucuparia</i>	✓		
Mulberry	<i>Morus</i> spp.	✓		
Nandina	<i>Nandina domestica</i>			
Nasturtium	<i>Tropaeolum majus</i>			
Natal plum	<i>Carissa macrocarpa</i>	✓		
New Jersey tea	<i>Ceanothus americanus</i>			
Opuntia and nopal	<i>Opuntia</i> spp.	✓		
Oregon grape	<i>Mahonia</i> spp.			
Osage orange	<i>Maclura pomifera</i>			

VITAMINS							TRACE MINERALS										
VITAMIN B3 (Niacin)	VITAMIN B6 (PYRIDOXINE)	VITAMIN B9 (FOLIC ACID)	VITAMIN B12	VITAMIN C	VITAMIN E	VITAMIN K	BORON	CALCIUM	CHOLINE	COPPER	IODINE	IRON	LITHIUM	MAGNESIUM	MANGANESE	PHOSPHORUS	
								✓						✓		✓	
								✓						✓		✓	
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COMMON NAME	TAXONOMIC NAME	TRACE MINERALS			
		POTASSIUM	SELENIUM	SODIUM	STRONTIUM
Juneberry	<i>Amelanchier arborea</i> , <i>Amelanchier alnifolia</i>				
Juniper	<i>Juniperus</i> spp.	✓			
Kelp	<i>Alaria esculenta</i> , <i>Alaria marginata</i>	✓			
Knotweed	<i>Polygonum cuspidatum</i>	✓			
Kochia (burning bush)	<i>Bassia scoparia</i>				
Kudzu	<i>Pueraria montana</i> var. <i>lobata</i>				
Labrador tea	<i>Ledum groenlandicum</i> , <i>Ledum palustre</i>				
Lamb's-quarter (goosefoot)	<i>Chenopodium</i> spp.				
Lantana	<i>Lantana camara</i>	✓			
Laver (nori)	<i>Porphyra</i> spp.	✓		✓	
Lemon Bacopa	<i>Bacopa caroliniana</i>				
Lemongrass	<i>Cymbopogon citratus</i>	✓			
Litchi Tomato	<i>Solanum sisymbriifolium</i>				
Loquat	<i>Eriobotrya japonica</i>	✓			
Mahoe and milo	<i>Hibiscus tiliaceus</i> , <i>Thespesia populnea</i>				
Mangrove	<i>Rhizophora mangle</i> , <i>Avicennia germinans</i>	✓			
Maple	<i>Acer</i> spp.	✓			
Marigold	<i>Tagetes</i> spp.				✓
Maypop	<i>Passiflora incarnata</i>	✓			
Mesquite	<i>Prosopis</i> spp.				
Milkweed	<i>Asclepias syriaca</i>	✓			
Miner's lettuce	<i>Claytonia perfoliata</i>	✓			
Mock (Indian) strawberry	<i>Potentilla indica</i>	✓			
Monkey puzzle tree	<i>Araucaria araucana</i>				
Moringa	<i>Moringa oleifera</i>				
Morning glory	<i>Ipomoea</i> spp.	✓			
Mountain ash (rowan)	<i>Sorbus americana</i> , <i>Sorbus aucuparia</i>	✓			
Mulberry	<i>Morus</i> spp.	✓			
Nandina	<i>Nandina domestica</i>				
Nasturtium	<i>Tropaeolum majus</i>	✓			
Natal plum	<i>Carissa macrocarpa</i>	✓			
New Jersey tea	<i>Ceanothus americanus</i>	✓		✓	
Opuntia and nopal	<i>Opuntia</i> spp.				
Oregon grape	<i>Mahonia</i> spp.	✓			
Osage orange	<i>Maclura pomifera</i>	✓			

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		VITAMINS		
		VITAMIN A	VITAMIN B1 (THIAMINE)	VITAMIN B2 (RIBOFLAVIN)
COMMON NAME	TAXONOMIC NAME			
Oxalis	<i>Oxalis</i> spp.			
Pacific Crab Apple	<i>Malus fusca</i>			
Pacific Silverweed	<i>Argentina egedii</i>			
Panic grass	<i>Panicum maximum</i>			
Papaya	<i>Carica papaya</i>		✓	✓
Paper mulberry	<i>Broussonetia papyrifera</i>			
Passion fruit	<i>Passiflora edulis</i>			
Pawpaw	<i>Asimina</i> spp.			
Pecan	<i>Carya illinoensis</i>			
Pellitory	<i>Parietaria</i> spp.			
Peppergrass	<i>Lepidium</i> spp.	✓		
Perennial Peanut	<i>Arachis glabrata</i>			
Perilla (Shiso)	<i>Perilla frutescens</i>			
Persimmon	<i>Diospyros virginiana</i>			
Pickerel weed	<i>Pontederia cordata</i>			
Pine	<i>Pinus</i> spp.	✓		
Plantago (plantain)	<i>Plantago major</i> , <i>Plantago virginica</i>			
Pokeweed	<i>Phytolacca americana</i>	✓		
Prairie turnip	<i>Pediomelumesculentum</i> , <i>Pediomelum hypogaeum</i> var. <i>hypogaeum</i>			
Purslane	<i>Portulaca oleracea</i>	✓		
Quack grass	<i>Elymus repens</i>			
Quickweed	<i>Galinsoga</i> spp.			
Ragweed	<i>Ambrosia artemisiifolia</i>			
Raspberry	<i>Rubus idaeus</i>			
Red Spiderling	<i>Boerhavia diffusa</i>			✓
Reindeer moss	<i>Cladonia rangiferina</i>	✓		
Rose	<i>Rosa</i> spp.	✓		
Russian thistle (tumbleweed)	<i>Salsola kali</i> ssp. <i>tragus</i>	✓		
Saw palmetto	<i>Serenoa repens</i>			
Seablite	<i>Suaeda</i> spp.			
Sea lettuce	<i>Ulva</i> spp.			
Sea oxeye	<i>Borrchia frutescens</i>			
Sea purslane	<i>Sesuvium portulacastrum</i>			

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COMMON NAME	TAXONOMIC NAME	TRACE MINERALS			
		POTASSIUM	SELENIUM	SODIUM	STRONTIUM
Oxalis	<i>Oxalis</i> spp.				
Pacific Crab Apple	<i>Malus fusca</i>	✓			
Pacific Silverweed	<i>Argentina egedii</i>			✓	
Panic grass	<i>Panicum maximum</i>			✓	
Papaya	<i>Carica papaya</i>				
Paper mulberry	<i>Broussonetia papyrifera</i>	✓			
Passion fruit	<i>Passiflora edulis</i>	✓			
Pawpaw	<i>Asimina</i> spp.	✓			
Pecan	<i>Carya illinoensis</i>	✓			
Pellitory	<i>Parietaria</i> spp.	✓		✓	
Peppergrass	<i>Lepidium</i> spp.	✓			
Perennial Peanut	<i>Arachis glabrata</i>				
Perilla (Shiso)	<i>Perilla frutescens</i>				
Persimmon	<i>Diospyros virginiana</i>	✓			
Pickerel weed	<i>Pontederia cordata</i>				
Pine	<i>Pinus</i> spp.				
Plantago (plantain)	<i>Plantago major</i> , <i>Plantago virginica</i>	✓			
Pokeweed	<i>Phytolacca americana</i>				
Prairie turnip	<i>Pediomelum esculentum</i> , <i>Pediomelum hypogaeum</i> var. <i>hypogaeum</i>	✓			
Purslane	<i>Portulaca oleracea</i>				
Quack grass	<i>Elymus repens</i>				
Quickweed	<i>Galinsoga</i> spp.	✓			
Ragweed	<i>Ambrosia artemisiifolia</i>				
Raspberry	<i>Rubus idaeus</i>	✓			
Red Spiderling	<i>Boerhavia diffusa</i>				
Reindeer moss	<i>Cladonia rangiferina</i>				
Rose	<i>Rosa</i> spp.	✓			
Russian thistle (tumbleweed)	<i>Salsola kali</i> ssp. <i>tragus</i>				
Saw palmetto	<i>Serenoa repens</i>	✓		✓	
Seablite	<i>Suaeda</i> spp.				
Sea lettuce	<i>Ulva</i> spp.	✓			
Sea oxeye	<i>Borrichia frutescens</i>				
Sea purslane	<i>Sesuvium portulacastrum</i>				

		NUTRIENTS								OTHER COMPOUNDS OF NOTE									
SULFUR	ZINC	CARBOHYDRATES	FATS AND LIPIDS	FIBER	OIL	PECTIN	PROTEIN	STARCH	SUGAR	METHYL SALICYLATE	AMINO ACIDS	CAFFEINE	CAROTENOIDS (inc. beta-carotene, lutein, lycopene, zeaxanthin)	FLAVONOIDS, FLAVONOLS, AND POLYPHENOLICS	MELATONIN	OMEGA-3 AND -6 ACIDS			
		✓		✓															
		✓		✓															
		✓																	
													✓						
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		✓	✓	✓			✓												
							✓						✓						
			✓				✓												
				✓			✓												
				✓			✓	✓											
		✓					✓								✓				
			✓				✓												
		✓		✓			✓						✓						
				✓			✓												
				✓			✓						✓						
													✓						

		VITAMINS		
		VITAMIN A	VITAMIN B1 (THIAMINE)	VITAMIN B2 (RIBOFLAVIN)
COMMON NAME	TAXONOMIC NAME			
Searocket	<i>Cakile</i> spp.			
Shepherd's purse	<i>Capsella bursa-pastoris</i>			
Silverthorn	<i>Elaeagnus</i> spp.			
Skunk Vine	<i>Paederia foetida</i>			
Smartweed	<i>Polygonum</i> spp.			
Smilax	<i>Smilax</i> spp.			
Soapberry and buffaloberry	<i>Shepherdia</i> spp.			
Society Garlic	<i>Tulbaghia violacea</i>			
Sorrel	<i>Rumex</i> spp.	✓		
Sow thistle	<i>Sonchus</i> spp.			
Spanish Needle	<i>Bidens</i> spp.			
Spiderwort	<i>Tradescantia</i> spp.			✓
Spruce	<i>Picea</i> spp.			
Star fruit	<i>Averrhoa carambola</i>			
Stinging nettle and Heartleaf Nettle	<i>Urtica</i> spp.	✓		
Stork's Bill	<i>Erodium cicutarium</i>	✓		
Strawberry	<i>Fragaria virginiana</i>			
Sugarberry (hackberry)	<i>Celtis laevigata</i>			
Sugarcane	<i>Saccharum officinarum</i>			
Sumac	<i>Rhus</i> spp.	✓	✓	
Sunflower	<i>Helianthus annuus</i>			
Sweet Potato Leaves	<i>Ipomoea batatas</i>			
Swinecress	<i>Coronopus</i> spp.			
Sycamore	<i>Platanus</i> spp.			
Tape Seagrass	<i>Enhalus acoroides</i>			
Tea	<i>Camellia sinensis</i>			
Tiger Lily	<i>Lilium lancifolium</i>			
Tindora (ivy gourd)	<i>Coccinia grandis</i>	✓		
Tropical almond	<i>Terminalia catappa</i>			
Tuberous Sweetpea (earthnut pea)	<i>Lathyrus tuberosus</i>			
Tulip	<i>Tulipa</i> spp.			
Usnea (beard lichen)	<i>Usnea</i> spp.			
Viburnum	<i>Viburnum</i> spp.	✓		
Violet	<i>Viola</i> spp.	✓		

[illegible]

COMMON NAME	TAXONOMIC NAME	TRACE MINERALS			
		POTASSIUM	SELENIUM	SODIUM	STRONTIUM
Searocket	<i>Cakile</i> spp.	✓			
Shepherd's purse	<i>Capsella bursa-pastoris</i>	✓		✓	
Silverthorn	<i>Elaeagnus</i> spp.				
Skunk Vine	<i>Paederia foetida</i>	✓		✓	
Smartweed	<i>Polygonum</i> spp.	✓			
Smilax	<i>Smilax</i> spp.	✓			
Soapberry and buffaloberry	<i>Shepherdia</i> spp.				
Society Garlic	<i>Tulbaghia violacea</i>	✓			
Sorrel	<i>Rumex</i> spp.				
Sow thistle	<i>Sonchus</i> spp.				
Spanish Needle	<i>Bidens</i> spp.				
Spiderwort	<i>Tradescantia</i> spp.				
Spruce	<i>Picea</i> spp.				
Star fruit	<i>Averrhoa carambola</i>	✓			
Stinging nettle and Heartleaf Nettle	<i>Urtica</i> spp.	✓			
Stork's Bill	<i>Erodium cicutarium</i>				
Strawberry	<i>Fragaria virginiana</i>	✓			
Sugarberry (hackberry)	<i>Celtis laevigata</i>	✓			
Sugarcane	<i>Saccharum officinarum</i>				
Sumac	<i>Rhus</i> spp.				
Sunflower	<i>Helianthus annuus</i>	✓			
Sweet Potato Leaves	<i>Ipomoea batatas</i>				
Swinecress	<i>Coronopus</i> spp.			✓	
Sycamore	<i>Platanus</i> spp.				
Tape Seagrass	<i>Enhalus acoroides</i>				
Tea	<i>Camellia sinensis</i>	✓			
Tiger Lily	<i>Lilium lancifolium</i>	✓			
Tindora (ivy gourd)	<i>Coccinia grandis</i>				
Tropical almond	<i>Terminalia catappa</i>	✓			
Tuberous Sweetpea (earthnut pea)	<i>Lathyrus tuberosus</i>				
Tulip	<i>Tulipa</i> spp.				
Usnea (beard lichen)	<i>Usnea</i> spp.				
Viburnum	<i>Viburnum</i> spp.				
Violet	<i>Viola</i> spp.	✓			

[illegible]

		VITAMINS		
		VITAMIN A	VITAMIN B1 (THIAMINE)	VITAMIN B2 (RIBOFLAVIN)
COMMON NAME	TAXONOMIC NAME			
Watercress	<i>Nasturtium officinale</i>			
Water hyacinth	<i>Eichhornia crassipes</i> , <i>Pontederia crassipes</i>			
West Indian Chickweed	<i>Drymaria cordata</i>			
White Indigo Berry	<i>Randia aculeata</i>			
Wild apple (crab apple)	<i>Malus</i> spp.	✓		
Wild carrot	<i>Daucus</i> spp.			
Wild cherry	<i>Prunus</i> spp.	✓		
Wild Fennel	<i>Foeniculum vulgare</i>			
Wild fig	<i>Ficus</i> spp.			
Wild garlic, wild onion, and ramps (Wild Alliums)	<i>Allium</i> spp.			
Wild grape	<i>Vitis</i> spp.	✓		
Wild mint	<i>Mentha arvensis</i> , <i>Clinopodium brownei</i>	✓		
Wild mustard	<i>Brassica</i> spp.	✓		
Wild plum (Chickasaw plum)	<i>Prunus angustifolia</i>			
Wild pumpkin (Seminole Pumpkin)	<i>Cucurbita moschata Duchesne ex Poirlet</i>	✓		
Wild radish	<i>Raphanus raphanistrum</i>	✓		
Wild rice	<i>Zizania</i> spp.			
Willow	<i>Salix</i> spp.	✓		
Winged yam	<i>Dioscorea alata</i>			
Yaupon Holly	<i>Ilex vomitoria</i>			
Yellow pond-lily	<i>Nuphar</i> spp.			
Yellow thistle	<i>Cirsium horridulum</i>	✓		
Yucca	<i>Yucca</i> spp.			

VITAMINS							TRACE MINERALS									
VITAMIN B3 (Niacin)	VITAMIN B6 (Pyridoxine)	VITAMIN B9 (Folic Acid)	VITAMIN B12	VITAMIN C	VITAMIN E	VITAMIN K	Boron	Calcium	Choline	Copper	Iodine	Iron	Lithium	Magnesium	Manganese	Phosphorus
								✓						✓		
				✓				✓						✓		✓
				✓												
				✓												
								✓		✓		✓				
				✓	✓			✓						✓		✓
								✓								✓
								✓				✓				✓
				✓		✓		✓								✓
								✓								
				✓												
				✓										✓		
				✓												✓
✓					✓											✓
				✓	✓			✓								

COMMON NAME	TAXONOMIC NAME	TRACE MINERALS			
		POTASSIUM	SELENIUM	SODIUM	STRONTIUM
Watercress	<i>Nasturtium officinale</i>	✓			
Water hyacinth	<i>Eichhornia crassipes</i> , <i>Pontederia crassipes</i>				
West Indian Chickweed	<i>Drymaria cordata</i>	✓		✓	
White Indigo Berry	<i>Randia aculeata</i>				
Wild apple (crab apple)	<i>Malus</i> spp.				
Wild carrot	<i>Daucus</i> spp.				
Wild cherry	<i>Prunus</i> spp.	✓			
Wild Fennel	<i>Foeniculum vulgare</i>	✓		✓	
Wild fig	<i>Ficus</i> spp.			✓	
Wild garlic, wild onion, and ramps (Wild Alliums)	<i>Allium</i> spp.	✓			
Wild grape	<i>Vitis</i> spp.	✓			
Wild mint	<i>Mentha arvensis</i> , <i>Clinopodium brownei</i>	✓			
Wild mustard	<i>Brassica</i> spp.	✓			
Wild plum (Chickasaw plum)	<i>Prunus angustifolia</i>	✓			
Wild pumpkin (Seminole Pumpkin)	<i>Cucurbita moschata</i> Duchesne ex Poiret				
Wild radish	<i>Raphanus raphanistrum</i>	✓		✓	
Wild rice	<i>Zizania</i> spp.				
Willow	<i>Salix</i> spp.	✓			
Winged yam	<i>Dioscorea alata</i>				
Yaupon Holly	<i>Ilex vomitoria</i>				
Yellow pond-lily	<i>Nuphar</i> spp.	✓			
Yellow thistle	<i>Cirsium horridulum</i>	✓		✓	
Yucca	<i>Yucca</i> spp.	✓			

		NUTRIENTS									OTHER COMPOUNDS OF NOTE								
SULFUR	ZINC	CARBOHYDRATES	FATS AND LIPIDS	FIBER	OIL	PECTIN	PROTEIN	STARCH	SUGAR	METHYL SALICYLATE	AMINO ACIDS	CAFFEINE	CAROTENOIDS (inc. beta-carotene, lutein, lycopene, zeaxanthin)	FLAVONOIDS, FLAVONOLS, AND POLYPHENOLICS	MELATONIN	OMEGA-3 AND -6 ACIDS			
							✓						✓						
													✓						
	✓	✓		✓		✓													
													✓						
													✓						
				✓									✓						
				✓			✓												
							✓												
	✓											✓							

Weeds are widespread, commonplace, and often nutritious, but, as you might expect, nutritional information for wild plants can be difficult, if not impossible, to obtain. Scientific research takes money, expertise, and time, and “weeds” are rarely the subject of a detailed study. Whenever possible, this book includes nutritional information and Nutrition Notes for the listed species; however, some species do not have data available and will consequently lack such information.

the WEEDS

Acorn

Quercus spp.

NOTABLE NUTRIENTS OR USES Protein, carbohydrates, folic acid, potassium, phosphorus

SAFETY NOTES Toxic to dogs, horses, cattle, sheep, and goats. For humans, acorns must be leached of tannins first.

NATIVE STATUS About 90 native oak species in the US



Green Deane's Itemized Plant Profile

IDENTIFICATION Small nuts with caps that grow on oak trees. Acorns with large and rough-textured caps tend to be more bitter than others.

TIME OF YEAR Usually late summer and fall; oak trees do not produce every year.

RANGE Generally the eastern half of the US and along the West Coast

ENVIRONMENT Oaks inhabit all kinds of environments.

METHOD OF PREPARATION Roasted for snacks, ground into flour

Green Deane's Notes

Acorns are familiar to many, but they are a wild food that offers a rare abundance of calories and fat (about 500 calories and 30 grams of fat in just a handful).

Oak trees begin to produce acorns at around 20 years old, but usually the first full crop won't happen until the tree is about 50. The crop from an oak is called a *mast* (from the Middle English word *mete*, which means food and is also the root of our word *meat*). How many acorns a tree produces is directly related to the amount of rain it receives in spring the year the tree masts; the more rain, the more acorns. The average 100-year-old oak produces about 2,200 acorns per season. Only 1 in 10,000 acorns will become a tree.

Nutrition Notes

White oak, per 100 grams

500 calories, 30 g fat, 50 g carbohydrates, 4.6 g protein, 3.45 g fiber

Vitamin B9 (folic acid)	539 mg
Calcium	41 mg
Magnesium	62 mg
Phosphorus	79 mg

Nutrition Notes

Acorn flour, per 100 grams

501 calories, 30.17 g fat, 54.65 g carbohydrates, 4.9 g protein, 4 g fiber

Vitamin A	51 IU
Vitamin B1 (thiamine)	0.15 mg
Vitamin B2 (riboflavin)	0.15 mg
Vitamin B3 (niacin)	2.38 mg
Vitamin B5 (pantothenic acid)	0.93 mg
Vitamin B6 (pyridoxine)	0.68 mg
Vitamin B9 (folic acid)	114 mg
Calcium	43 mg

Copper	0.61 mg
Iron	1.21 mg
Magnesium	110 mg
Phosphorus	103 mg
Potassium	712 mg
Zinc	0.64 mg

Oaks fall into two main categories: white and red. White oaks fruit in one season, and red oaks—a group that includes black oaks—fruit after two seasons and can have more bitter acorns than white oak varieties. The leaves of white oaks have round lobes and no prickles at the ends, while those of red oaks have prickles. They also have scales on the caps of the acorns, hair inside the caps, and a sheath around the nut.

The first steps in preparing acorns for consumption are separating and drying them. Put your acorns in a bowl or pot of water and remove those that float (most of the ones that float have an edible weevil grub in them). Then dry the ones that sink on a baking sheet in a preheated oven at 150°F or lower for about 15 minutes—or leave them in the sun for a few days. This will shrink the nuts inside, which makes acorns easier to shell.

After shelling acorns, you must leach out their tannic acid, which can damage your kidneys. (Most acorns are too bitter to eat without leaching anyway.) Your final use of the acorns should factor into how you leach them: If you are going to use acorns for flour, they should be cold-processed, but if you are going to roast them whole for snacking, then boiling is fine.

One method for leaching is to grind them into a coarse meal and soak it for several days or weeks (depending on the species) in many changes of cold water until the water is clear. Acorns prepared this way will be slightly bland but are good for making acorn flour (sometimes leached acorns can end up dark but sweet). You can also leach acorns by keeping them in a

container that would leak slowly, such as a towel in a pail. Allow to leach until the water runs clear or pink (not yellow).

A quicker way to leach acorns that you will turn into flour is to put them in a blender or food processor with water (roughly 1 quart of water per 2 cups acorns) and blend them into a slurry. Pour the slurry into a fine-mesh bag, and massage it under running water for 15 minutes. This method turns hours of leaching into minutes, but some meal and oil are lost in the process—acorn oil not only has nutritional value but is also expensive to purchase bottled.

My preferred way to leach acorns is to grind them in a lot of water (roughly 1 quart of water per 2 cups acorns) to a fine meal. Let the meal set, strain it, then add more water to the meal, let set, and strain again. I do that until the water is clear or the meal is not bitter. It takes a few days to a week. Then I dry the meal in the sun, out of reach of any squirrels, then in an oven under 150°F for 45–60 minutes. I end up with meal or flour, depending on the grind, that will not crumble when cooked.

Another method for leaching is boiling—though if done wrong, boiling will bind the tannins to the acorns and they will not lose their bitterness. Also, when you boil acorns, you boil off the oil with the tannins.

The boiling process requires two pots. Put the shelled acorns in one pot of already boiling water until the water darkens. Drain and move the acorns to another pot of boiling water while the first pot reheats to boiling with fresh water. Keep transferring the acorns to new boiling water until the water stays clear. *Never* put boiled acorns in cold or nonboiling water because it will bind the tannins to them, and they will stay bitter.

The temperature at which you process acorns at any point is critical. Boiling them in water or roasting them above 165°F cooks the starch in acorns, whereas cold processing or oven temperatures under 150°F do not cook the

starch. Coldwater-leached acorn meal thickens when cooked; hot water-leached acorn meal does not thicken.

Whole leached acorns can be roasted for an hour at 350°F; coarsely ground leached acorns take less time. Whole roasted acorns can be eaten or ground into flour. To make flour out of your whole or coarsely ground acorns, pulse them in a blender or food processor. Strain to remove larger pieces, and run those through the blender or food processor again.

Since acorn flour is high in oil, it needs to be refrigerated so it will not get rancid. Acorn flour has no gluten and thus is not binding, so it is usually mixed 50:50 with wheat flour.

Agave

Agave americana

NOTABLE NUTRIENTS OR USES Calcium, potassium, magnesium, phosphorus

SAFETY NOTES Root and raw juice can be caustic. Leaves contain toxic saponins. Edibility of cultivars can vary. Toxic to cattle, sheep, and goats

NATIVE STATUS Native to southern US



Nutrition Notes

Cooked, per 100 grams

135 calories, 0.29 g fat, 32 g carbohydrates, 21 g sugar, 10.6 g fiber

Vitamin A	113 IU
Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.1 mg
Vitamin B3 (niacin)	0.16 mg
Vitamin B5 (pantothenic acid)	0.04 mg
Vitamin B6 (pyridoxine)	0.22 mg
Vitamin B9 (folic acid)	7 mcg
Vitamin C	0.3 mg

Vitamin E	0.36 mg
Calcium	460 mg
Copper	0.11 mcg
Magnesium	39 mg
Phosphorus	9 mg
Potassium	59 mg
Selenium	0.2 mcg
Sodium	13 g
Zinc	0.25 mcg

Green Deane's Itemized Plant Profile

IDENTIFICATION No stem; thick, massive gray-green leaves form a basal rosette up to 6 feet long and 1 foot wide; side spines curved like fishhooks, tip spines to an inch long. Flower stalk branched, 20–40 feet tall; 3- to 4-inch yellow-green flowers. Leaves can have light horizontal bands on the underside; leaves of cultivars have two colors or stripes.

TIME OF YEAR Leaves anytime; flowers and stalk when it blooms—age 10 in warm climates, age 60 in cold climes

RANGE Southern United States

ENVIRONMENT Well-drained, sandy, gravelly, slightly acidic soils

METHOD OF PREPARATION Flowers, stalks, leaves roasted; leaves boiled for juice; seeds ground into flour for bread or to thicken soups; nectar for sweetener

Green Deane's Notes

If you like tequila, thank a bat. Or a hummingbird or a moth. Those three creatures pollinate agave, which is used to make tequila, as well as foods and other products including fiber, razor strops, nails, and needles.

Agave americana, the American Century Plant, is the most commonly known species of agave, which is closely related to the lily. Edibility of

parts varies from species to species. Many agaves flower only once, putting up a tall stalk of aromatic blossoms and then dying—hence the name Century Plant.

While the foraging rule is often “young and tender,” the opposite is true with agave: Old and tough are the best. As the plant ages, its palatability improves—and its carbohydrate and sugar contents increase. Most of the carbs and sugar are in the body of the plant and the bases of the leaves, excluding the green parts.

During the summer, each agave plant can produce several pounds of flowers, which can be roasted or boiled. In summer, the stalks can be roasted before they blossom; they taste like molasses. If you leave a depression in the bottom of a stalk after removing it, it will fill with sap, which can be used to make tequila or consumed on its own as a beerlike drink (if fermented and bottled like beer). The root is caustic, so you need to handle it carefully, but once dry-cooked (for example, baked in an oven or in a container in hot sun, or buried under a campfire) for a couple of days, it should taste sweet. Flower nectar can be used in sauces and drinks in place of sugar; when bottled, it will last up to two years.

You can roast agave leaves, chew them, and spit out the fiber. The leaves—rich in sap in the winter and spring—can also be boiled and the juice used as a soup base. But test a little first: Agave leaves and juice are sometimes too bitter to consume. Leaves also contain toxic foamy compounds known as saponins, so you have to boil bitter leaves.

Alligator Weed

Alternanthera philoxeroides

NOTABLE NUTRIENTS OR USES Vitamin C, beta-carotene, protein, carbohydrates

SAFETY NOTES A portion greater than 100 grams (3.5 ounces raw, which probably translates to a half pound or more wet/cooked) might provide an excessive dose of calcium oxalate, which can cause kidney stones.

NATIVE STATUS Native to Asia; introduced in the US



Nutrition Notes: *A. sessilis*

Per 100 grams

0.3 g fat, 19.67 g carbohydrates, 5.6 g protein

Vitamin A	956 mcg
Vitamin B1 (thiamine)	1.45 mg
Vitamin B2 (riboflavin)	1.86 mg
Vitamin B3 (niacin)	14.56 mg
Vitamin C	52.25 mg
Vitamin E	1.54 mcg
Amino acids	4.82 mcg
Beta-carotene	1090 mcg

Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial herb whose branched, hollow stems have vertical hairy grooves on two opposite sides; stems, which ascend toward the ends and are rooted at the lower nodes, are creeping or floating. Leaves have very short or no stems, with a ring of white hairs between the two opposite leaf bases. A cluster of white, papery blossoms on stalks.

Alternanthera sessilis, or Joyweed, is in the same family as alligator weed (see Nutrition Notes). It has stems that lie flat and may be spear-shaped but mostly are elliptical. Blossoms are shiny white; fruit is a somewhat glistening beige-yellow. The plant can reach 3 feet tall but can be several yards long when it grows floating.

TIME OF YEAR Nearly year-round

RANGE Primarily the southern US (eastern Texas to South Carolina); also in Hawaii

ENVIRONMENT In fresh water or on damp land; can also tolerate some brackish water

METHOD OF PREPARATION Leaves raw or cooked

Green Deane's Notes

You might buy alligator weed in the produce department someday. Currently a little-known edible, it can be used in salads and even tastes better than many more-popular greens. If you're going to cook alligator weed, boil it a few minutes like dandelions. If you're concerned about its calcium oxalate content, soaking for 30 minutes, followed by boiling, reduces its oxalate content according to a 2006 paper (Savage and Dubois).

Introduced into the United States around 1894, alligator weed is an invasive species in many states and grows in places other than where alligators lurk. There are several varieties of *Alternanthera* in warmer areas, so confirm your identification carefully. *A. philoxeroides* is the most common type in the United States. *A. sessilis* is found in the same areas as *A. philoxeroides*—basically, the South.

Amaranth

Amaranthus spp.

NOTABLE NUTRIENTS OR USES Protein, fiber, lysine, methionine, phosphorus, potassium, magnesium

SAFETY NOTES Amaranth leaves contain oxalic acid, so consume with caution (or abstain) if you have kidney issues. Also, see note below about potential high nitrogen content.

NATIVE STATUS Some species native, others introduced



Nutrition Notes	
Per 100 grams	
Iron	7.61 mg
Magnesium	248 mg
Phosphorus	557 mg
Potassium	508 mg

Green Deane’s Itemized Plant Profile

IDENTIFICATION Annual growing to 3–6 feet, with long stalks. Coarse, hairy, stout stems; leaves oval to lance-shaped, often notched when young, usually

dull green with prominent veins. Dense terminal clusters of bristly, small, and usually green flowers.

TIME OF YEAR Spring to summer for leaves; summer or fall for seeds, depending on climate

RANGE Most of the Americas; has spread around the world

ENVIRONMENT Full sun (will not grow in shade), rich to poor soils as long as moisture is available. A frost-tender opportunist found around and in gardens, roadsides, vacant lots.

METHOD OF PREPARATION Leaves raw or cooked, seeds raw or ground into flour

Green Deane's Notes

Protein is often hard to come by when foraging, but it can be found in some roots and grains, including amaranth, which is classified as a pseudocereal—that is, a plant that can be eaten like a grain but belongs to a different botanical family from true grains like wheat and rice. There are two types of amaranths: red and green. If you're eating just the leaves, green amaranth has more protein than the red—and some in the green group have higher levels of vitamin C too.

You can eat the leaves and seeds of all amaranths (with some precautions). Tender young leaves may be consumed raw in salads or cooked like spinach, but like other leafy greens, they should be eaten with caution by people with kidney problems due to their oxalic acid content. Of the 70 different species, some 20 are edible. Those with leaves commonly used in salads or soups are *Amaranthus blitus*, *A. tricolor*, *A. cruentus*, *A. dubius*, *A. edulis*, and *A. hypochondriacus*. For bread and the like, folks use the grains of *A. caudatus*, *A. hypochondriacs*, *A. cruentus*, *A. hybridus*, and *A. mantegazzianus*.

Though sometimes listed as inedible, *Amaranthus retroflexus* was regularly consumed by Native Americans. *A. palmeri* is also sometimes listed as not edible, primarily because it sequesters nitrates, but young plants of the species are acceptable cooked. Another *Amaranthus* that some sources list as inedible is *A. viridis*, though I have no idea why. I have eaten this species myself, as well as *A. spinosus*—which is spiny, so you must harvest it carefully; it can be boiled in salted water and eaten. When cooked, scrape off the outer skin, then eat the inside. *A. tricolor* is a good example of an amaranth that's grown for its beauty but also edibility. If harvested in a fertilized area or in drought, amaranth can be high in nitrogen.

American Beautyberry

Callicarpa americana

NOTABLE NUTRIENTS OR USES No nutritional data available; flavonoids, apigenin; insect repellent

NATIVE STATUS Native to central and southeastern US

Green Deane's Itemized Plant Profile

IDENTIFICATION Deciduous shrub 3–6 feet tall. Large opposite leaves elliptical to ovate, with sawtoothed edges. Flowers cluster around stem, funnel-shaped with four clefs. Fruit has two to four seeds.

TIME OF YEAR Spring and fall in warm climates, late summer to fall farther north

RANGE Widely distributed along the Atlantic and Gulf Coasts, from Virginia to Florida and west to Arkansas, Oklahoma, and Texas; cultivated in Hawaii

ENVIRONMENT Dry or moist open woods, thickets, and hummocks; adapted to hot, humid summers and moderate winters

METHOD OF PREPARATION Raw, steeped for tea, made into jelly



Green Deane's Notes

I enjoy American beautyberries as a trailside nibble, yet in nearly every class I've taught, someone says, "My mother told me they were poisonous." The fruit of the species is not toxic—*insipid* might be a better description. More often than not, the fruit has little or no taste. Although the plant has been called Sourberry, I think that's an exaggeration: I have never tasted a sour berry on the American beautyberry. As I tell my students, the fruit makes an excellent jelly, a good wine, and a horrible pie. If you use them like blueberries in a muffin, the muffin will have green spots rather than purple.

I think the berries are slightly astringent and best eaten raw only a few at a time. Julia Morton, PhD, a research professor of biology at the University of Miami, said of them in her book *Wild Plants for Survival in South Florida*, “The rank odor of the plant makes nibbling of [berry] bunches on the stem unpleasant.”

The color of the fruit suggests it contains some anthocyanins (antioxidant flavonoids), and there are reports that the fruit has been used for a purple dye. Dried berries can be used to make a medicinal tea. To use the leaves as an insect repellent, rub them on skin. Native Americans had many uses for the beautyberry, among them a decoction of the root bark as a diuretic; the leaves for treating edema; a tea from the roots for dysentery and stomachache; a tea made from the roots and berries for colic; and the leaves and roots in sweat baths for the treatment of malaria, rheumatism, and fever.

Worldwide there are about 140 different species of *Callicarpa*, a name that is Greek for “beauty fruit.” Blooming pink in spring and fall, *C. americana* has fruit clustered along the main stem. A fairly common beautyberry that is an ornamental is Japanese beautyberry, or *C. japonica*. It’s easy to distinguish from the American beautyberry because its fruit is on long stems away from the main branch and, unlike *C. americana*, it is long-branched, slim, skinny-leafed, and weeping. Other than one person who tells me she makes jelly out of *C. japonica* berries, I have no firsthand edibility reports for the fruit. I do know its leaves are dried and used to make tea; I also know that the berries of *C. dichotoma* (aka Purple Beautyberry or Early Amethyst) are too bitter to consume.

American Black Nightshade

Solanum americanum

NOTABLE NUTRIENTS OR USES Calcium, iron, beta-carotene

SAFETY NOTES This edible plant is frequently confused with Deadly Nightshade, aka Belladonna (*Atropa belladonna*), which is highly toxic. The easiest ways to tell them apart are the fruit and the flowers: Both have green fruit that ripens to a deep purplish black, but the fruit of American Black Nightshade is pea-size and grows in clusters, while the fruit of Deadly Nightshade grows singly and is about the size of a cherry. Also, American Black Nightshade has small, white, star-shaped flowers, while Deadly Nightshade has flowers that are large, tube-shaped, and brownish pink. Make sure to harvest only completely ripe berries.

NATIVE STATUS Widespread throughout the world



Nutrition Notes

Young leaves, per 100 grams

190 calories, 0.5 g fat, 8 g carbohydrates, 4.7 g protein

Vitamin B1 (thiamine)	0.14 mg
Vitamin C	40 mg
Calcium	210 mg
Iron	6.1 mg
Beta-carotene	1.9 mg

Nutrition Notes

Boiled leaves and green fruit, per 100 grams

140 calories, 0.1 g fat, 7.4 g carbohydrates, 1.9 g protein

Vitamin B1 (thiamine)	0.10 mg
Vitamin C	17 mg
Calcium	274 mg
Iron	4 mg
Beta-carotene	0.5 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Solanum americanum*, alternating leaves hairy underneath, particularly at the edges; leaves can be oval to triangular, no teeth or irregularly toothed. Flowers white with five petals and small anthers. Berries are speckled with white until fully ripe, whereupon they turn intensely purple (but look black) and shiny—shiny, that's important. The berries are usually in a cluster, on several short stems originating from one point or nearly one point—that's also important. The sepals do not adhere to the fruit. West Indian Nightshade (*S. ptychanthum*) is similar to *S. americanum* but is mostly hairless and may have leaves with purple undersides, particularly when young.

TIME OF YEAR Summer in northern climes, year-round in warmer areas

RANGE Found throughout the US

ENVIRONMENT Tolerates sand and dry conditions but prefers well-cultivated, rich soils. Whatever makes a tomato happy will make these plants happy.

METHOD OF PREPARATION Ripe berries raw or cooked, young leaves and stem tops boiled

Green Deane's Notes

If you've ever had the desire to create a huge botanical mess, you don't have to: Botanists have already done it with nightshades. The basic problem is that when botanists began to study and name plants, they classified nightshades as toxic or edible. Some botanists, thinking different species in different parts of the world were the same species, confused toxics and edibles, thus creating something of a nightshade nightmare.

In addition to familiar edible nightshades such as tomatoes, potatoes, and eggplant, we have two edible wild nightshade plants in the US: *Solanum americanum*, or American Black Nightshade, and *S. ptychanthum*, or West Indian Nightshade. These two look similar and can be used in similar fashion—but in both cases, you must make sure the plant you have is actually edible (see Safety Notes).

Though it's ubiquitous and plentiful, I avoided American Black Nightshade for years because of its reported toxicity even when ripe. Then I learned of a local grocery store manager from Cuba who ate the ripe berries whenever he found them, so I had to give them a try. I was careful, starting with one-quarter of a single berry, then the next day half a berry, and working my way up. I haven't eaten a whole cup of them at a time, but as a trailside snack, the ripe berries have proved quite edible. The flavor varies from musty to sweet, forgettable to tasty.

The berries can also be cooked (famed 20th-century forager and author Euell Gibbons baked a pie with them). The young leaves and stem tops are edible as well, but you have to boil them twice, 15 minutes each time. My reason for boiling has to do with a friend who lightly boiled leaves of *S. americanum* in a small amount of water until tender. He, his wife, and their daughters all ended up with headaches after eating the leaves cooked. This

happened more than once—my friend even wondered if he had mistakenly eaten the leaves of a totally different plant.

The entire nightshade family, including the edible species, contains chemicals called alkaloids that can make some people sick. The older the leaves get, the more bitter they are and the more alkaloids they contain, so foragers should collect younger leaves and tops and not consume them to excess. If the leaves still taste bitter after being boiled, do not eat them. Be aware that boiling reduces the vitamin C and beta-carotene content—from 19.5 mg to 5.8 mg per 100 grams for the former, 1.8 mg to 0.9 mg for the latter.

Among other varieties, *Solanum villosum* has been used as a leafy vegetable. Its berries are edible when ripe; they should be yellow to deep orange (but keep in mind that there is a good deal of variation in between individual plants). The leaves of *S. guineense* are also edible. And adding to the confusion is *S. retroflexum*—formerly *S. burbankii*—whose cooked leaves and ripe fruit are edible. The plant was reportedly bred by Luther Burbank in the early 1900s and is a hybrid. *S. retroflexum* is compact, typically growing to a height of 1–2 feet, and can fruit when only 4 inches tall. The fruit is dark bluish purple when ripe.

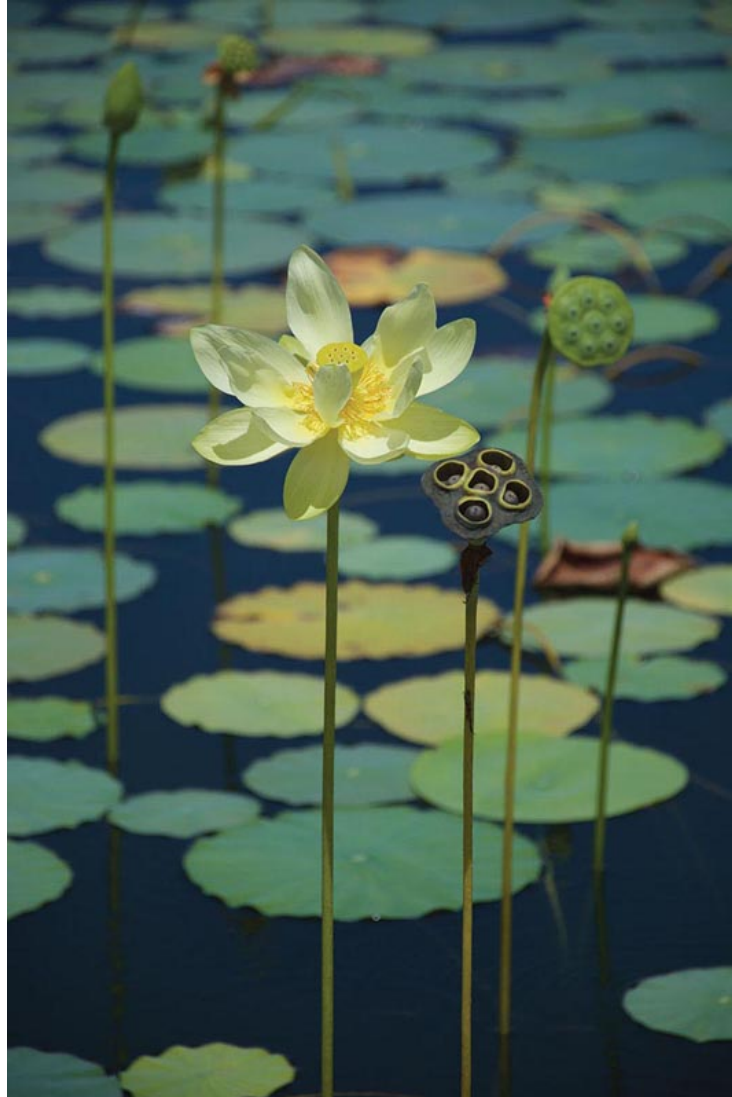
American Lotus

Nelumbo lutea

NOTABLE NUTRIENTS OR USES Potassium, sodium, phosphorus, calcium, magnesium

SAFETY NOTES No known safety issues—all parts of the plant are edible.

NATIVE STATUS Native range covers extensive areas along the Mississippi River from Ontario, Iowa, and Wisconsin southward



Green Deane's Itemized Plant Profile

IDENTIFICATION Large, showy yellow or pink flowers on long stems; large round leaves, some floating, some out of the water; stem attaches to the middle back of the leaf

TIME OF YEAR Roots year-round, though best in autumn; flowers in late spring or summer in warm areas, later in northern climes

RANGE Southern Ontario, Iowa, Minnesota, and Wisconsin to southern New England and New York; south to Florida and west to Texas

ENVIRONMENT Shallow ponds, edges of slow rivers

METHOD OF PREPARATION Raw, steeped, boiled, or dried, depending on part

Green Deane's Notes

The genus *Nelumbo* consists of just two plants, the American lotus (*Nelumbo lutea*) and the Asian lotus (*Nelumbo nucifera*), which have slightly different shapes and different-colored blossoms. While the Asian lotus's nutrition has been better documented (see box), research shows that the American lotus outshines the Asian lotus when it comes to three specific nutrients. According to a 2014 Auburn University study, American lotus root had 116 mg of ascorbic acid (vitamin C) versus 74 mg for Asian lotus; proline content was, respectively, 9 mg and 5.27 mg; and total antioxidants were 285 mg for American versus 198 mg for Asian. One can't help but wonder if the American lotus has more of the other nutrients too.

Nutrition Notes: *N. nucifera*, root

Per 100 grams

Cooked: 2.6 g fat, 15.51 g carbohydrates, 1.54 g protein

Raw: 0.1 g fat, 17.23 g carbohydrates, 2.6 g protein

Vitamin A	11 mcg RE (cooked)
Vitamin C	26.5 mg (cooked), 44 mg (raw)
Calcium	26 mg (cooked), 45 mg (raw)
Magnesium	21 mg (cooked), 23 mg (raw)
Phosphorus	76 mg (cooked), 100 mg (raw)
Potassium	352 mg (cooked), 556 mg (raw)
Sodium	166 mg (cooked)
Choline	24.8 mg (cooked)

Nutrition Notes: *N. nucifera*, seeds

Per 100 grams

Raw: 0.53 g fat, 17.28 g carbohydrates, 4.13 g protein

Dried: 2 g fat, 64.47 g carbohydrates, 15.41 g protein, 13 IU (raw), 50 IU (dried)

Vitamin A	13 IU (raw), 50 IU (dried)
Calcium	44 mg (raw), 163 mg (dried)
Magnesium	56 mg (raw), 210 mg (dried)
Phosphorus	168 mg (raw), 626 mg (dried)
Potassium	367 mg (raw), 1368 mg (dried)
Sodium	1 mg (raw), 5 mg (dried)

Lotus seeds are far easier to harvest and cook than lotus root (which is actually a rhizome). The seeds are low in fiber and delicious when boiled, tasting similar to chestnuts or chickpeas with a little corn tossed in. They also can be boiled down and made into a paste. When combined with sugar, the paste is often used in pastries. Mature seeds have a good quantity of oil and can be popped; there is a little sprout inside the seed that is too bitter to eat raw when seeds are mature. Lotus seeds can be eaten like peas when young: Boil in ample water 20 minutes; after draining, push them out of their shells, remove the green bits inside, salt, and enjoy. Skinny seeds tend to be bitter. If the cooked sprout in the seed is too bitter, don't eat it. Older seeds can be ground into flour. There are about 1,475 calories in 1 pound of lotus flour, which is approximately 72% carbohydrates, 12.2% fiber, 7.8% protein, 4% water, 3.3% minerals, and 0.7% fat.

The American lotus's root is banana-shaped and thick, and it can reach close to a foot long. When cut, it looks like a wagon wheel inside. The roots grow away from the plant and can be difficult to find unless you're digging in the middle of a large patch. The lotus is a favorite water plant among fishermen because, unlike other water lilies, it does not grab fishing lines in its clef.

The root is sweet and similar to sweet potato but can be eaten raw, sliced up and stir-fried, or stuffed. Young lotus roots are good for salads, and the starchy roots are also good for making soups. The root discolors quickly when cut, so treat it like an apple and put it in water with lemon juice once

it's peeled. It is often left to soak in water to reduce bitterness; in fact, any part of the Lotus is better steeped in water and cooked to reduce bitterness.

Food uses for other parts of the plant include boiling unopened leaves like spinach, drying flowers for tea or to add to soups, and wrapping food in wilted leaves for cooking. Stems taste somewhat like beets and are usually peeled before cooking.

Aronia (Black Chokeberry)

Aronia melanocarpa

NOTABLE NUTRIENTS OR USES Potassium, calcium, magnesium, anthocyanins, tocopherols

SAFETY NOTES No known safety issues

NATIVE STATUS Native to eastern Canada and the eastern US



Nutrition Notes

Per 100 grams	
47 calories, 0 g fat, 43 g carbohydrates, 7 g protein, 7 g fiber	
Vitamin B1 (thiamine)	18 mcg
Vitamin B2 (riboflavin)	20 mcg
Vitamin B3 (niacin)	300 mcg
Vitamin B5 (pantothenic acid)	280 mcg
Vitamin B6 (pyridoxine)	28 mcg
Vitamin B9 (folic acid)	20 mcg
Vitamin C	20 mg
Vitamin E (tocopherols)	1.7 mg
Vitamin K	24 mcg
Calcium	32 mg
Iron	0.93 mg
Magnesium	16 mg
Potassium	218 mg
Sodium	2.6 mg
Zinc	0.14 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Multistemmed shrub, loses leaves in winter, 4–8 feet tall, can form dense colonies. Leaves alternate, 1–3 inches long and 0.75–2 inches wide; oval but narrower at the base than near the tip; fine, regular teeth. Top surface of leaves dark green, upper surface of the midrib shiny with dark glands, lower surface lighter green, both sides nonhairy. Flowers have five white petals, many pink stamens. Berries up to half an inch in diameter, one to five seeds each, glossy and black when ripe, hang down in clusters of 30 or so from red stems.

TIME OF YEAR Flowers open mid-May, fruits usually mature by August

RANGE New England south to Georgia and reportedly North Florida; west to Texas

ENVIRONMENT Hardy to –40°F. Moderately tolerant of shade; prefers moist acid soils from bogs, swamps, low wooded areas and clearings as well as

dry rocky slopes, bluffs, and cliffs. Also found beside roads and power line rights-of-way. Tolerant of salt spray, drought, and soil compaction.

METHOD OF PREPARATION Can be eaten raw but bitter. Better made into jams and jellies, juice, or wine; also used in baked goods.

Green Deane's Notes

It's a long way from the mountains of Maine down the Appalachian Trail to the mountains of western North Carolina. It's also a long way from one's 20s to one's 60s. These distances revealed themselves when I noticed a plant while hiking in the Smokies.

It was familiar but not familiar, a wrong plant in the wrong place, I thought. But it was the right plant in the right place, kind of. The problem was I had 40 years' absence from the species. Helping me sort out the mystery was, edible-plant expert, storyteller, author, Doug Elliott, longtime resident of North Carolina. "Sounds like an *Aronia*," he said, "with the unfortunate name of chokeberry." He got it right.

What confounded me is that the *Aronia* is generally thought of as a northern plant and quite common in my native state of Maine. But North Carolina does not have the deep freeze of New England winters—unless one goes up. Going up 1,000 feet can take you north about 700 miles in climate. Thus, the northern genus *Aronia* creeps down the spine of the Appalachian Mountains, thriving in the cooler, higher altitudes. It was until recently a much-overlooked species.

Botanists can't agree on just how many *Aronia* species exist—there is a red variety, a purple variety, a black one (maybe), commercial cultivars, a few natural hybrids, and regional genetic differences. But the main point is their edible bitter berries are one of the richest sources of stuff we think is good for us: anthocyanins. These are water-soluble pigments that protect our cells

from free radicals. If a pharmaceutical company could invent a plant, it would be the Aronia.

Anthocyanins are the main reason blueberries are blue and why they are good for us. Aronia berries have *greater* antioxidant activity than blueberries and cranberries—five times higher than those two—and higher antioxidant levels than pomegranates, strawberries, cherries, and even the vaunted goji berries. No fruit grown in a temperate climate has more antioxidants and flavonoids than Aronia. Though bitter-tasting, the berries can range from 12% to 20% sugar, and per 100 fresh grams they contain 560–1,059 mg of anthocyanins. It's no wonder they're cultivated in many states. Aronias can be used in landscaping, and some have brilliant fall foliage.

One species of Aronia, *A. melanocarpa*, has been well investigated. It has not only anthocyanins but a host of positive chemicals, including those that are potentially antibacterial, antiviral, anti-arterial plaque, anti-high cholesterol, anticancer, anti-flu, anti-high blood sugar, and anti-Crohn's disease, as well as substances that improve insulin production and protect the liver and the stomach. No toxic effects are reported, and the genus is naturally pest-resistant.

On the mountaintops of North Carolina, the only chokeberries I saw were black. The Black Chokeberry produces larger fruits than the Red Chokeberry, and they mature in late summer and then shrivel and drop (the Red Chokeberry's fruits mature in fall and persist into winter). Black Chokeberry is glabrous (not hairy), while Red Chokeberry is pubescent (hairy). Black Chokeberry plants tend to have a more rounded shape and remain more fully leaved to the base, while the Red Chokeberry is more upright and tends to be bare at the base. The Black Chokeberry is found in both wet and dry soils, while Red Chokeberry lives mostly in wet soils and is more tolerant of heat.

Aspen and Poplar

Populus deltoides, *Populus tremuloides*

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, calcium, potassium

SAFETY NOTES The bark of these trees contains salicin, a compound similar to aspirin, so those on blood thinners or who need to avoid aspirin should avoid consuming it.

NATIVE STATUS Native to Canada and cooler regions of the US



Green Deane's Itemized Plant Profile

IDENTIFICATION *Populus deltoides* (Eastern Cottonwood), large tree that can grow to 100 feet high, with a trunk 5 feet wide. Bark silvery white, smooth or lightly fissured when young, dark gray and deeply fissured on older trees. Twigs grayish-yellow and stout. Winter buds slender, pointed, to 0.75 inch long, yellowish brown, resinous. Leaves large and triangular, to 4 inches long and wide, dark green in summer, yellow in fall, flattened base, coarsely toothed, teeth curved and gland-tipped, petiole flat.

TIME OF YEAR Catkins on single-sex trees early spring. Male catkins are reddish purple, to 4 inches long; female catkins green, 2.5–5 inches long. Seed capsules in early summer, releasing numerous small seeds attached to cotton-like strands.

RANGE Quaking Aspen (*P. tremuloides*) is the most widely distributed tree in North America. It occurs throughout most of Canada and west to Alaska; in the Lower 48, it's found as far south as Virginia, Missouri, and Nebraska; farther west (Upper Midwest and Plains States to the West Coast and desert Southwest), it's generally found only at higher elevations. The Eastern Cottonwood's range extends into the Deep South and west to Texas and the Mountain States.

ENVIRONMENT Likes to border streams and wet valley soils; in colonies with willows; often first to inhabit new sandbars or bare floodplains

METHOD OF PREPARATION Inner bark raw or cooked

Green Deane's Notes

There are some three dozen species of poplar in the world, about 15 in North America. While poplars and aspens are in the same genus, they have differences. Usually the winter buds of poplars are very resinous and have 12–60 stamens (the male parts of the flowers); aspens are only slightly resinous and have 6–12 stamens.

The Eastern Cottonwood, a type of poplar, is an impressive tree and was once a favorite street and shade tree. Its roots, however, had the habit of entering and clogging sewer systems, so many municipalities banned it.

The cambium—the so-called inner bark—is edible raw on *Populus deltoides* and *P. tremuloides* (quaking aspen) as well as other *Populus* species, including *P. angustifolia* (Narrow-Leaf Poplar), *P. fremontii* and *P. grandidentata* (large-tooth aspen), *P. sargentii* (Sargent Cottonwood), *P. alba* (white poplar, native to Europe), and *P. trichocarpa* (black

cottonwood). Cambium is high in vitamin C. To cook, boil or dry. Native Americans often cut cambium into strips, boiled or dried it, then ground it and mixed it with flour to make bread or mush.

Poplar and aspen sap can also be drunk, and the catkins of some species are also edible. Twigs have a bitter, aspirin-like taste. When it comes to nonfood uses, Eastern Cottonwood roots can be dried for use in friction-fire making, and its wood is used for boxes, crates, furniture, plywood, matches, and paper products.

Australian Pine

Casuarina equisetifolia

NOTABLE NUTRIENTS OR USES Water, iron, potassium, manganese

SAFETY NOTES Use caution when handling the sharp, spiky fruit.

NATIVE STATUS Native to Australia, the Pacific Islands, and Southeast Asia; introduced in the US



Green Deane's Itemized Plant Profile

IDENTIFICATION Pinelike tree of open, erect growth to 150 feet, with dark-green, hairlike “needles” that are actually miniature jointed branches. Fruit is conelike and woody, with sharp points 0.75 inch long and 0.5 inch wide. Male trees have flower spikes from yellow to brown at the end of branchlets, while female plants bear globular reddish flowers along the trunk and branches.

TIME OF YEAR Sap and young branchlets all year, fruiting in spring and fall; young cones stay on tree all year.

RANGE Found primarily in Southern Florida in the US; occurs less commonly in Arizona, California, and Hawaii

Nutrition Notes

Dried leaves, per 100 grams

4.42% fat, 56% carbohydrates, 6% protein, 22% fiber

Vitamin C	34.51 mg
Copper	12 mg
Iron	264 mg
Manganese	226 mg
Potassium	235 mg
Zinc	16 mg

Nutrition Notes

Fruit, per 100 grams

3.82% fat, 66% carbohydrates, 3% protein, 17% fiber

Vitamin C	51.45 mg
Copper	17 mg
Iron	225 mg
Manganese	121mg
Potassium	246 mg
Zinc	13 mg

ENVIRONMENT Wet. Some *Casuarina* species tolerate salt well and are found on shores; others cannot tolerate salt and are usually found inland.

METHOD OF PREPARATION Drink or chew some parts without cooking; roast seeds, young cones, and leaves

Green Deane's Notes

The Australian pine—also known as the Ironwood and in Australia as the She-Oak—is not a true pine. It looks like a pine, but it is not in the *Pinus* genus. Pine needles are modified leaves; what look like “needles” on the Australian pine are branchlets, and they have minute leaves on them.

Where it’s native, *Casuarina* was and is a lifesaver. This is mainly because of water. Australian pines are an indicator of water, and they store water in their branches and roots. It was the tree the Australian Aboriginal people looked to for water. Its sap is drinkable, and the gum of the tree is edible. The Aboriginal people also ate the young “cones” and branchlets and roasted the winged seeds, though at 30,000 seeds a pound, I’m sure that wasn’t easy.

The Australian pine was introduced into Mexico before 1852 and Hawaii by 1895 and was a common shade tree in South Florida by 1921. Seeds were readily available from California by 1908. As with many problem plants, the US Department of Agriculture had a hand in the tree’s proliferation. It has been used as a windbreak and for ditch and canal stabilization, and in Florida was the tree of choice to protect causeways to the Kennedy Space Center, artistically interrupted by *Melaleuca*. But as popular as Australian pines once were, cities have been crafting ordinances against the species since 1952—they can ruin water and sewer mains and can cause streets to buckle. Plus, they may fall over—roots growing horizontally for water make them unstable—and their removal, standing or down, is extremely expensive.

If the trees weren’t invasive, they would be recognized for their many good qualities. They can be trained into a hedge (but are highly vulnerable to fire and intolerant of frost). Seasoned outdoor cooks say Australian pine is one of the best woods for barbecuing, adding a nice flavor to meats. It has been called the best firewood in the world and can be burned green off the stump. India plants forests of them just for firewood.

You can drink the sap from *Casuarina* branches and roots, and you can chew its young branches and cones to quench thirst. Dried sap is edible, as are gum and cones. You also can put dried sap/gum in warm water and drink it. Young cones and leaves are edible when cooked—boil them. Seeds are edible when roasted.

Bacopa (Water Hyssop)

Bacopa monnieri

NOTABLE NUTRIENTS OR USES Calcium, vitamin C, phosphorus, antioxidants, protein

SAFETY NOTES May upset your stomach if eaten in large amounts

NATIVE STATUS Native to India, Asia, Africa, Europe, and the US



Nutrition Notes

Per 100 grams

38 calories, 1.05 g fat, 6 g carbohydrates, 2.1 g protein	
Vitamin B3 (niacin)	0.3 mg
Vitamin C	63 mg
Calcium	202 mg
Iron	7.8 mg
Phosphorus	16 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Leaves opposite, succulent, and thick; 0.13 inch wide and 0.6 inch long, oblanceolate (wide at one end, tapered at the other), with one vein and a single crease on the back in the middle. Flowers are small and white, with four or five petals.

TIME OF YEAR Year-round

RANGE Florida, Louisiana, Texas, and Hawaii in the US

ENVIRONMENT Fresh and brackish waters, usually sunny damp spots

METHOD OF PREPARATION Raw (though bitter), steamed, dried for tea

Green Deane's Notes

Bacopa has had a lot of research done on it, and justifiably so: It apparently helps people who are stricken with Alzheimer's disease. Research in India suggests it improves memory function even in younger people. Most studies on the effects of Bacopa on memory find—as did one from the *Journal of Alternative and Complementary Medicine*, in which subjects took a 300 mg extract daily for 12 weeks—that it “has potential for safely enhancing cognitive performance in the aging.” (In 2019, however, the FDA issued a warning to manufacturers of Bacopa supplements that such health claims were unproven.)

This species is also called the Smooth Water Hyssop or just the water hyssop. Brahmi and herb of grace are other names for it. The plant looks

like a small purslane, but that is where the resemblance stops. Bacopa is really bitter when fresh—even people who like bitter say it's bitter. (For Lemon Bacopa, see [page 180](#).)

Whether you consider Bacopa a food or a medicinal depends on your tastes or needs. The little plant's mineral claim to fame is calcium. To eat Bacopa, some folks chop it up and toss it in salads. It can be steamed for a cooked vegetable, and in India it is dried and used as a tea—but let's just say the tea is a *very* acquired taste. It has perhaps 4,000 years of use in India.

I know more people who use Bacopa as a nootropic—a supplement to boost brain performance. Six people have told me it's made a significant difference to their memory abilities as they age. Memory applications vary greatly.

Balloon Vine

Cardiospermum halicacabum

NOTABLE NUTRIENTS OR USES Iron, manganese, zinc, boron, copper

SAFETY NOTES No known safety issues

NATIVE STATUS Native to India and the tropical Americas

Green Deane's Itemized Plant Profile

IDENTIFICATION Woody, fast-growing perennial vine to 10 feet tall, with three three-parted leaves that reach 4 inches long. The plants climb with tendrils and need some form of support. Small, white, unshowy flowers bloom summer through fall. The fruit—from which the plant gets its common name—is a brown, thin-shelled, inflated, angled capsule up to 1.13 inch in diameter, each containing three black seeds that have a white heart-shaped scar.



Nutrition Notes

Per 100 grams	
Calcium	2.48 mg
Copper	0.21 mg
Iron	75.72 mg
Manganese	12.78 mg
Potassium	1.59 mg
Zinc	1.30 mg
Boron	1.03 mg
Molybdenum	0.12 mg

TIME OF YEAR All year in warmer climates, seasonal in cooler climates

RANGE West Texas north to Montana, Florida north to Massachusetts, and most points in between; considered a noxious weed in Alabama, Arkansas, South Carolina, and Texas

ENVIRONMENT Waste places and cultivated ground

METHOD OF PREPARATION Boil young leaves and shoots.

Green Deane's Notes

For a tropical plant, the balloon vine can take cold weather. In parts of the South and Texas, it's considered a nuisance plant ... all the more to eat, though few know it is edible. It's not a plant found in most foraging guides.

Used and consumed for a long time in India, balloon vine is extremely high in iron, with five times the daily need for premenopausal women. It also provides five times your daily need—and more than 10 times what's typical for plants—of manganese. It has a good amount of protein and a lot of flavonoids but is unusually low in potassium and calcium. The balloon vine's young leaves and shoots can be cooked.

There are three edible balloon vines in North America: *Cardiospermum halicacabum*, *C. microcarpum*, and *C. corindum*. *C. microcarpum* is found in Florida and Washington, D.C. *C. corindum* is found in Florida, Texas,

and Arizona. There are several reports of balloon vine growing well on the West Coast. It also grows in Hawaii, Puerto Rico, Central America, South America, the Philippines, Malaysia, Polynesia, India, Sri Lanka, Africa, Europe, window boxes in Brooklyn, etc. In cooler areas it is an annual, in warmer ones a perennial.

Barnyard Grass

Echinochloa crus-galli

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, magnesium, calcium, protein

SAFETY NOTES Potentially toxic to horses if eaten in large amounts

NATIVE STATUS Native to Eurasia; introduced in the US



Green Deane's Itemized Plant Profile

IDENTIFICATION Summer annual to 5 feet tall. Seedlings hairless, leaf sheaths usually tinged red or maroon at the base, often growing outward before turning up. Stems thick, typically branched at the lower nodes, may be tinged red to maroon at the base. Leaves 4–20 inches, 0.25–1.25 inches wide, with a distinct white midvein that becomes keeled near the stem end. Possibly some short hairs at the leaf base. No ligule. Flowers knotlike. Seed head a terminal panicle, 4–16 inches long, green or purple, may have individual spikelets with a long terminal awn (like a thin piece of straw from a broom at the end of the seed spike). Lower branches of flowers

spread farther apart than the upper branches. The head can be erect or drooping, sometimes purplish.

TIME OF YEAR Flowers June to October, seeds in fall, germinates late winter to early spring. In warm areas, the process can be continuous throughout the year.

RANGE Worldwide; everywhere in North America save for Alaska, the northern tier of Canada, and Newfoundland

ENVIRONMENT Rich soil in wet areas, such as roadsides, ditches, irrigated crop fields, pastures, orchards, vineyards, margins of ponds, brackish marshes, swamps, rice fields. Tolerates poor drainage and flooding but not dense shade

METHOD OF PREPARATION Seeds dried, roasted, boiled, ground into flour; young shoots raw or cooked; roots boiled

Nutrition Notes

Per 100 grams

417 calories, 4 g fat, 68 g carbohydrates, 16 g protein, 26 g fiber

Vitamin B1 (thiamine)	0.33 mg
Vitamin B2 (riboflavin)	0.10 mg
Vitamin B3 (niacin)	4 mg
Calcium	212 mg
Copper	0.2 mg
Iron	62.5 mg
Magnesium	360 mg
Manganese	6.4 mg
Phosphorus	581 mg
Potassium	738 mg
Sodium	10 mg
Zinc	11.2 mg

Green Deane's Notes

Barnyard grass is a hated weed around the world. It can mature in as few as 42 days, producing some 40,000 seeds for each plant (good news for us), and is a severe problem in rice and corn production—one barnyard grass plant per square foot can reduce a crop by 25% and 20%, respectively. While barnyard grass likes damp places, it is not bothered by elevation and will grow in areas as high as 5,000 feet.

Echinochloa is from two Greek words meaning “grass hedgehog” (porcupine), because the seed head can have strawlike bristles sticking out of the seed head, or just one at the end. *Crus-galli* is ancient Latin for “cockspur,” again a reference to the seed spike.

Winnowed seeds from barnyard grass can be used as a staple grain—parched, roasted, boiled, ground into flour, or popped like popcorn. You can eat the young shoots as a vegetable, either raw or cooked. In Japan, barnyard grass is used to make macaroni and dumplings. Boiled roots are consumed to temper indigestion in the Philippines. Seeds can be roasted and used as a caffeine-less coffee bean substitute.

There are about 20 species in the genus, with great variability. One, *Echinochloa colona* or jungle rice, has purple stripes on its leaves. Cockspur grass, a name sometimes used interchangeably with barnyard grass, is another variety. Something all *Echinochloa* species have in common is the lack of a ligule—an outgrowth like a collar or tuft of hair where the blade bends away from the stem. All common grasses have it except *Echinochloa*. Its absence is a major identifying characteristic of the genus.

Grasses are nearly as difficult as mushrooms to sort out: They’ve an argot all their own, and grass encyclopedias are wildly expensive. So here’s a tip for when you’re trying to figure out what grass you have in front of you: Google the botanical name for what you think it might be, plus “Umberto Quattrocchi” (in quotes). He’s a grass expert, and usually you will get an

excerpt from one of his books on the first page of your search. His entries tend to be detail-heavy and long, but this is a way to access expert material on grasses without spending thousands.

Basswood

Tilia americana

NOTABLE NUTRIENTS OR USES Calcium, potassium, vitamin C, phosphorus, protein

SAFETY NOTES Long-term consumption of tea made from the flowers may cause heart damage in rare instances, so consume in moderation.

NATIVE STATUS Eastern half of North America



Nutrition Notes

Fresh leaves, per 100 grams

1.5 g protein

Vitamin C (ascorbic acid)	67.5 mg
Calcium	290 mg
Phosphorus	29 mg
Potassium	230 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Tall tree to 100 feet, round uniform crown. Leaves alternating, distinctly heart-shaped, strongly toothed. Creamy, five-petaled flowers in small clusters; each cluster has a tonguelike, light-colored bract unique among North American trees. Gray bark furrowed with flat ridges.

TIME OF YEAR Spring in warmer climes, early or midsummer farther north

RANGE Central to eastern Canada south to the Carolinas and east to Oklahoma

ENVIRONMENT Deep, well-drained soils

METHOD OF PREPARATION Raw or cooked, various parts

Green Deane's Notes

My first recollection of the basswood is not in the salad bowl but rather of helping my stepfather make pipes. We'd make the pipe's bowl from applewood, debarked and boiled to "drive out" the sap. Then we'd go find a basswood sapling of just the right size to make a stem, running a wire through the core and reaming out the pith. The piece was fitted to the bowl, and the pipe was done except for polishing. Dad would rub the sides of his nose with the finished bowl to give it a shine (oil glands on our nose apparently are perfect for that). I still have one or two of those pipes we made some 60 years ago.

It was not unusual that we turned to the basswood for utilitarian uses rather than food. Even among the Native Americans, only one tribe—the Ojibwe—was known to eat parts of the basswood. Indeed, modern foragers may consume more of the tree than the Indians did. However, the tree was a major source of fiber for Indigenous people, and that's where the common name comes from. *Bass* is a corruption of *bast*, which is a type of fiber. Native Americans soaked the bark for weeks to loosen long fibers and then made it into bags, baskets, belts, fishnets, house mats, snowshoe netting,

ropes, sewing thread, and even thread for suturing wounds. It was used where a lot of fiber strength was not needed.

The Ojibwe ate the basswood's young buds raw or cooked as greens, and they used the sweet sap, boiling it down to a syrup. Fortunately, there is more to be had. Besides the buds, the young leaves are a prime wild green of the forest. I like the young basswood leaves right off the tree when they are about the size of your thumbnail. Young, shiny shoots are also tasty. You can make a salad using the leaves like lettuce. Cooked, they lose flavor and shrink in size considerably. The cambium, between the outer bark and the inner wood, is moist in springtime and tastes of cucumber. It's good for soups; when dried, it can be powdered and used for bread. You can also eat it raw off the tree, but don't destroy the tree for it—take vertical pieces.

The flowers are edible raw or cooked, and you can make a tea from them (2 tablespoons per cup). They also produce a lot of nectar, creating high-quality honey. (For that reason, the basswood is sometimes called the bee tree.) The tree also produces small nuts, more like seeds. Fill one pocket with them as you wander through the woods, crack 'em with your teeth, and spit out the shells.

Basswoods can live about 200 years. They cease producing seeds around 100, and past 120 years old they start to get a lot of "cavities" and become home to woodland creatures, notably porcupines and raccoons. One particular habit of the basswood is producing sprouts, especially after the main tree dies. Often you will find a clump of basswood sprouts of varying sizes, many of which get large enough to harvest. Basswood is valued for its wood, which is soft, light, and easily worked, particularly for turned or hand-carved items.

Basswood has multiple common and scientific names, including Linden. Experts can't agree if there is one species with variations or several species, though they are all edible. *Tilia* in the current name, *Tilia americana*,

derives from the Greek word *ptilon*, meaning “wing”—referring to the large, winglike bracts of the flower cluster. (Some think they look more like tongue depressors than wings.)

The tree has a cousin that gets a lot of press: *Tilia americana* var. *mexicana*, whose leaves can have sedative effects. Like *Passiflora incarnata*, it apparently works by producing GABA (gamma-aminobutyric acid) and affecting serotonin—both neurotransmitters that can improve mood. The *mexicana* species’ leaves also contain quercetin, rutin, and isoquercitrin, compounds believed to have healing properties.

Beach Orach

Atriplex cristata, Atriplex nuttallii

NOTABLE NUTRIENTS OR USES Protein, calcium, phosphorus, vitamin A, vitamin C

SAFETY NOTES No known safety issues

NATIVE STATUS Primarily found in the eastern coastal US

Green Deane's Itemized Plant Profile

IDENTIFICATION Sprawling-to-erect annual or perennial, much-branched and clump-forming, 6 inches–1.5 feet tall. Stems obtusely angled. Leaves alternate or opposite, oblong, oval, or slender-elliptical, 0.5–1.5 inches long, often curling upward; silvery scurfy underneath. Leaves attach to main stem or have short stems. Flowers in short, dense, naked terminal spikes, usually yellow; seeds reddish brown.



Nutrition Notes: *A. nuttallii*,

fresh leaves

Per 100 grams

0.3 g fat, 5.1 g carbohydrates, 2.3 g protein, 1.2 g fiber

Vitamin A	204 mcg RE
Calcium	106 mg
Phosphorus	48 mg

Nutrition Notes: 6 Species, Averaged

Per 100 grams

Copper	0.21 mg
Iron	2.5 mg
Manganese	0.80 mcg

Zinc

0.61 mcg

TIME OF YEAR Nearly year-round in warmer areas, summer into fall in northern climes

RANGE Along the Gulf and Atlantic Coasts from Texas to New Hampshire. An *Atriplex* can be found in all states except Arkansas and Tennessee.

ENVIRONMENT Mostly coastal, sandy beaches, keys

METHOD OF PREPARATION Leaves boiled, seeds cooked (boiled or roasted)

Green Deane's Notes

Anyone familiar with the goosefoot family (*Chenopodium*) will see the Beach Orach, aka the Crested Saltbush, and presume it is edible. And it is. A distant cousin to the *Chenopodium* and closely related to beets and spinach, *Atriplex* has a long history of feeding folks in the Old World. In America, Native tribes on the East Coast apparently ignored it for the most part, but Western tribes didn't. Hopi People used the ashes of *A. canescens* as baking powder.

More than two dozen *Atriplex* are edible. *Atriplex cristata* (also called *A. pentandra*) is one type whose leaves and seeds are eaten around the world. Boil the leaves like greens, and roast or fry the tiny seeds, then add to soups and stews or grind. Some say the leaves and seeds can be eaten raw, but I find the raw leaves too bitter.

Other edible varieties include *A. nuttallii*, *A. argentea*, *A. californica*, *A. canescens*, *A. confertifolia*, *A. coronata*, *A. elegans*, *A. halimus*, *A. lentiformis*, *A. patula*, *A. semibaccata*, *A. serenana*, and *A. truncata*. *A. glabriuscula* runs from the New England coast north to Greenland and is found in the Great Lakes area down through Indiana to Kentucky. The roots of *A. californica* can be used as a substitute for soap.

Nutrient content can vary a lot from species to species, but six species tested showed on average a 3.81% sodium content, 3.36% potassium, and 1.55% calcium. The top five amino acids were glutamic acid, aspartic acid, lysine, arginine, and leucine. We know the plants have ascorbic acid (vitamin C) and beta-carotene (vitamin A) because a small Indian study of saline's effects on some nutrients in the species reported increased amounts of C and beta-carotene when the plants were aged in salt for 30 days.

Beech

Fagus grandifolia

NOTABLE NUTRIENTS OR USES Potassium, vitamin B6, vitamin B2, manganese, copper

SAFETY NOTES Nuts have a small amount of the slightly toxic substance fagin in their skin (the skin can be easily rubbed off after nuts are roasted). Nuts from the European Beech (*F. sylvatica*) have more fagin and should not be consumed by anyone pregnant or breastfeeding and only lightly by others.

NATIVE STATUS Native to the eastern US



Nutrition Notes: Beechnuts

Per ounce

0.5 oz fat, 10 g carbohydrates

Vitamin B2 (riboflavin)	105 mg
Vitamin B6 (pyridoxine)	194 mg
Copper	19 mg

Iron	7 mg
Manganese	38 mg
Potassium	288 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Deciduous tree 60–80 feet tall. Leaves alternate, simple, elliptical to oblong-ovate, 2.5–5.5 inches long, pinnately veined; 11–14 pairs of veins, with each vein ending in a sharp distinct tooth, shiny green above, very waxy and smooth, slightly paler below. Male flowers on heads hang from a slender 1-inch stalk, female flowers on shorter spikes, appearing just after leaves in the spring. Nuts are irregularly triangular, shiny brown, found in pairs within a woody husk covered with recurved spines.

TIME OF YEAR Nuts ripen in fall, young leaves in spring while tender

RANGE Southeastern Canada south to the Florida panhandle, west to Mississippi and parts of Arkansas, Louisiana, Oklahoma, and Texas

ENVIRONMENT Old forests, neither dry nor wet; found with maples, birches, basswood, black cherry, southern magnolia, eastern white pine, red spruce, and several species of hickories and oaks

METHOD OF PREPARATION Cambium (inner bark) and young leaves raw, mature seeds roasted or made into nut butter

Green Deane's Notes

A century ago in my native state of Maine, everyone looked forward to beechnut season—usually in October after a frost (which there was no shortage of). You could buy the sweet nuts in nearly every general store. Merritt Fernald, who was the main botanical expert at Harvard in the first half of the 20th century, called beechnuts the most delicious product of northern forests and lamented that “sophistication” caused people to lose

interest in them. I became familiar with them because I grew up only a few miles from Beech Hill Road in Freeport, Maine, memorable for its beech trees and steep roads, particularly in the wintertime.

The American beech (*Fagus grandifolia*) is found from Nova Scotia down to northern Florida and over to the Mississippi River and into eastern Texas, eastern Oklahoma, and northwest Arkansas. Paleobotanists tell us that at one time the beech was found through most of North America and could grow there now. But because of ice ages, they disappeared from the western two-thirds of the continent, save for some in the mountains of northeastern Mexico.

Beech trees begin growing seeds around 40 years old, and by age 60 they can produce huge amounts. They are prolific but don't produce every year and can cycle anywhere from two to eight years. In northern and central states, beeches flower in late April or early May, when the new leaves are about one-third grown; seeds ripen between September and November. The trees are quite vulnerable to spring frosts. Heavy frost can cause the bur to open and drop its seeds. A crop of beechnuts, like a crop of acorns, is called a *mast*. Two to four nuts are usually found in each bur. There are about 1,600 seeds to a pound.

The American beech provides quite a few edibles, including its inner bark. Young leaves are quite tasty while they are soft. The sweet nuts can be roasted or crushed into a butter, but you should remove their brown covering (comes off easily after roasting) because of potentially toxic fagin in the skin.

Beechnut oil does not have any fagin and is good for cooking. It's been used in Europe for centuries as a cooking oil—and as a hair tonic. Seeds have been crushed and boiled into a nourishing drink or ground up and added to cornmeal and berries to make a bread.

Beechwood is used for flooring, furniture, handmade products, veneer, plywood, railroad ties, baskets, pulp, charcoal, rough lumber, shoe lasts, buttons, bowls, and barrels for aging beer. It is also preferred by those with woodburning stoves because of its high density and good burning qualities.

Begonia

Begonia spp.

NOTABLE NUTRIENTS OR USES Vitamin C, lutein, beta-carotene, quercetin, rutin

SAFETY NOTES Do not eat if you avoid rhubarb or spinach because of oxalates or are susceptible to kidney stones.

NATIVE STATUS Native to South America, Central America, South Africa, and Asia; primarily cultivated in the US but occasionally found in the wild. Most hybrids come from the Wax Begonia, which is native to Brazil.

Green Deane's Itemized Plant Profile

IDENTIFICATION Tender herbaceous perennials with attractive mounds 6 inches–2 feet high. Succulent stems; leaves usually ovate, scalloped, glossy green; flowers may be single or double; seeds dustlike. *B. × tuberhybrida* resembles a small, fleshy carnation or pom-pom.

TIME OF YEAR Tends to bloom constantly

RANGE USDA Hardiness Zones 8b–11



Nutrition Notes: *B. boliviensis*

Vitamin C (ascorbic acid)	680 mg
Calcium	34.8 mg
Copper	0.19 mg
Iron	0.26 mg
Magnesium	14.9 mg
Manganese	0.43 mg
Phosphorus	20.2 mg
Potassium	184 mg
Sodium	9.3 mg
Zinc	0.46 mg
Molybdenum	0.008 mg
Flavonoids	184 g

ENVIRONMENT Rich, well-drained soils. Flower growers say the soil must be allowed to dry some between waterings, but I have often seen begonias growing in swamps. They are a warm-climate understory plant, liking bright shade, and don't tolerate frost.

METHOD OF PREPARATION Leaves and blossoms raw, leaves and stems cooked

Green Deane's Notes

A weed is a plant that grows where you don't want it to. What is a weed in one country, however, can be an ornamental in another country or wild food in yet another. A good example is the begonia. Yes, begonias are edible and a fine source of vitamin C.

About 40 years ago I was canoeing on Rock Springs Run, a river in central Florida, when I saw begonias just above the variable water line. I couldn't believe it: wax begonias, one of the most common houseplants in the world, in the middle of the swamp—and edible. I next saw them about 17 miles away on a damp bike trail. Then I spied them by a stream in another county some 30 miles to the southwest. (It is true that once you get a plant “inside your head,” you see it without having to look for it.) The wax begonia is just one of many invasive weeds that is naturalized in warm, wet areas, spreading by dust-size seeds.

Like most plants, begonias are a chemical factory. A 2017 article in the *Journal of Food Science Technology* detailed the chemical content of leaves and stalks of *Begonia nelumbiifolia*. At the top of the list, at 91–103 mg per 100 grams, was oxalic acid—what makes begonias tart to the taste. It's also what makes them taboo for those concerned about oxalate, which is associated with kidney stones. After oxalic acid came ascorbic acid, nature's form of vitamin C: 50–65 mg per 100 grams. The rest of the lineup comprised substances believed to have antioxidant or anti-inflammatory power, including lutein (1–2.5 mg), beta-carotene (1–3 mg), quercetin (1.3–2.7 mg), and rutin (0.5–1.7 mg). For all the nutrients, higher concentrations were found in stalks than leaves.

While I nibble on the flowers and leaves raw where I find them, they are prepared in various ways. Some Native peoples boil the stems, then mix them with beans or into scrambled eggs or soup. Begonias make a tart condiment. I like to fry the leaves—they turn black—then salt them: sour and salty at the same time. Petals of the tuberous begonia are edible, and the stems can be used like rhubarb.

I also make a delicious begonia tartlet: Mince leaves and simmer them in a pot with about $\frac{1}{2}$ cup of water until a thick paste forms. Mix paste with 3 ounces of sour cream and a $\frac{1}{4}$ – $\frac{1}{2}$ teaspoon of sugar for every 2 cups of leaves used. Pour the mixture into a pastry shell (graham cracker crust contrasts nicely with the tart filling). Bake at about 300°F for 30–60 minutes, until mixture bubbles gently. Cool before serving.

I have noticed the flavor varies with the color of the leaves and blossoms, as the species can vary from green to red and blossoms white to red. Environment can also influence flavor: If growing in a swamp, begonias can taste ... swampy; I detect no unusual flavor when they're grown in garden soil.

There are many edible species of begonia—tuberous, nontuberous, hybrid, and nonhybrid. As a good source of vitamin C, they have long been eaten in some cultures to prevent scurvy. In the West Indies, people may drink tea made with begonia leaves to treat a cold. In Brazil and various Pacific countries, begonias have been cooked up as potherbs or used to make a sauce for meat and fish, in salads, and as a flavoring ingredient. In northern Mexico and China they are a favorite wild snack for children. Some rural people use the tart sap to curdle milk for making cheese.

Begonias have had numerous medicinal applications. The leaves have been ground and applied to cuts, bruises, strains, and sprains. Roots and tubers of begonias have been a mainstay of folk medicine for centuries, used as an emetic, purgative, and cathartic. The antibacterial, acid-based sap has been put on wounds and in concoctions to cure cough, consumption, and fever, and has been used to treat toothaches and gum ailments. Shoots have been used to treat upset stomach and enlarged spleen. The begonia is commonly used in the West Indies by herbalists to treat cancer due to its purported antitumor activity.

Betony

Stachys spp.

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, magnesium, choline, calcium

SAFETY NOTES Confirm your species identification carefully; see note below.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION *Stachys floridana* (Florida Betony), square-stemmed, erect, hairy perennial herb; tubers are segmented and resemble a rattlesnake's rattle, usually as long as your pinkie; stems up to 18 inches tall. Simple leaves opposite on the stem. Flowers are pink to purple and occur in clusters of three to six; sepals are fused, forming a hairy tube with five lanceolate lobes. Petals are fused, two-lipped. Upper lip is somewhat erect, lower lip is three-lobed. *S. palustris* (Marsh Betony) looks similar but has purplish-red flowers in terminal spikes.



Nutrition Notes: *S. floridana*

Per 100 grams

63.6 calories, g fat, g cholesterol, 14.3 g carbohydrates, 3.5 g protein, 10.3 g fiber, 0.4 g lipids

Vitamin A	15.6 IU
Vitamin B1 (thiamine)	0.1 mg
Vitamin B2 (riboflavin)	0.1 mg
Vitamin B3 (niacin)	1.3 mg
Vitamin B5 (pantothenic acid)	0.3 mg
Vitamin B9 (folic acid)	107 mcg
Vitamin C	8.9 mg
Vitamin E	0.2 mg
Vitamin K	17.8 mcg
Calcium	25.2 mg

Copper	0.2 mg
Iron	0.7 mg
Magnesium	50.4 mg
Manganese	0.3 mg
Phosphorus	87.6 mg
Potassium	343 mg
Selenium	0.2 mcg
Zinc	0.5 mg
Betaine	0.2 mg
Choline	41.3 mg

TIME OF YEAR Fall in northern climes, before the ground freezes for winter. In warm climes, the best roots are fat and ready to eat before the hot summer begins; roots are near the surface, usually many found together. The plant can disappear during the hot months, reemerging in fall.

RANGE *S. floridana*, Florida north to Virginia and west to Texas; *S. palustris*, Northeastern US west to Illinois, Minnesota, and Wisconsin

ENVIRONMENT Moist yet well-drained areas, such as lawns

METHOD OF PREPARATION Roots, leaves, and shoots raw or cooked

Green Deane's Notes

Every spring and early summer I eat gourmet fare for free: little tubers that look like *Stachys affinis* and taste like *Stachys affinis* but don't cost \$150 a pound like *Stachys affinis*. They're the tubers of *Stachys floridana*, also called the Florida Betony or Florida Hedge Nettle. (Don't worry, it has northern relatives.)

While the two genus mates look different aboveground, their roots are twins to the eye and palate. The big difference is that *floridana* species didn't take the gourmet route, so it's literally dirt cheap. *S. affinis*, aka the Artichoke Betony, is native to Asia. In the 1880s it made it from China to Crosne, France—hometown of one Monsieur Pailleux, an importer. In time, the

tuber (now known as the Crosne, pronounced “crone”) captured the fancy of Parisian restaurants and from there hopped the Atlantic and began showing up in New York City hot spots, and the rest is expensive history.

Our humble local tubers infest many southern lawns, and millions of dollars are spent every year trying to get rid of them. My solution? Eat the weeds—in this case, they look and taste the same as their pricey relative. Some say the flavor of Florida Betony is similar to cauliflower, whereas I lean toward jicama. The texture is like a radish. The tubers make great pickles.

The roots of Florida Betony contain antioxidant chemicals and significant amounts of certain minerals. Raw, they make a crispy salad ingredient. They’re also great in stir-fries. Leaves and shoots of the plant can be eaten raw or cooked, though they’re rather musty-tasting and best mixed with other greens.

There are several other edible *Stachys* species. Marsh Betony, aka marsh woundwort (*S. palustris*), can be found in the Northeast and Midwest. Its tubers can be cooked in a variety of ways or dried and made into bread; the young shoots are cooked and eaten like asparagus. *S. hyssopifolia*, the Hyssop-Leaf Hedge Nettle (say that 10 times fast) is found in states that border the Atlantic, as well as Kentucky, Indiana, Illinois, Iowa, and Michigan. The seeds of *S. scopulorum* were eaten by Native Americans in the Southwest. The Coast Salish people of British Columbia ate the roots of *S. cooleyae*, also called *S. chamissonis*. The roots of Hedge Woundwort (*S. sylvatica*) are edible as well. One species that’s not is *S. officinalis*: Its roots are bitter and can make you throw up.

Birch

Betula spp.

NOTABLE NUTRIENTS OR USES No nutritional data available; calcium, potassium, magnesium, folic acid, quercetin

SAFETY NOTES People who have an allergy to bananas are often allergic to birches; also, birch contains a compound similar to aspirin, so if you're on blood thinners or otherwise avoid aspirin, be advised.

NATIVE STATUS An estimated 15–17 birch species are native to North America. The European Birch (*Betula pendula*) is native to Eurasia and introduced in the US (considered invasive in Kentucky, Maryland, Washington, and Wisconsin).



Green Deane's Itemized Plant Profile

IDENTIFICATION Medium-size deciduous tree 20–80 feet tall. Scaly, flaking bark can be gray, white, black, silver, or reddish/yellowish brown depending on species. Leaves alternate, simple, oval to triangular, doubly

serrated. Male flowers are pendulous catkins; female flowers short, erect catkins.

TIME OF YEAR Varies by area

RANGE *Betula papyfera* (white birch), Canada and the far northern US (Alaska, New England, eastern New York, Mountain States, and Upper Midwest). *B. nigra* (black birch), New England, Mid-Atlantic, Southeast (including the Florida panhandle), eastern Texas, and the Lower Midwest. *B. alleghaniensis* (yellow birch), southeastern Canada, New York, New England, Pennsylvania, Upper Midwest, and Appalachia (Kentucky, North Carolina, Tennessee, and West Virginia). *B. populifolia* (gray birch), southeastern Canada, New England, New Jersey, and eastern Pennsylvania.

ENVIRONMENT Varies by species: cold to temperate climates, high-altitude mountain areas to low-altitude floodplains and wooded streambanks

METHOD OF PREPARATION Drink sap or make other liquids from it. Make tea from root bark, leaves, branch tips. Eat tips, inner bark, young leaves raw.

Green Deane's Notes

Few things in nature are more beautiful than angled sun on a stand of white birches. They are showy and healthy for you. According to two studies, birch sap contains calcium, potassium, magnesium, manganese, copper, zinc, phosphorus, and folic acid. Flavonoids extracted from birch leaves include quercetin, myricetin, catechin, naringenin, p-coumaric acid, and kaempferol. Interestingly, birch trees in industrial areas have higher concentrations of nutrients than those in the countryside. The authors suggest this is because of stress or the weather.

There are multiple species of white birch, along with several other species in the birch (*Betula*) genus. Wherever they grow, birches are ... appealing. An adult birch tree can produce a million seeds a year—that's why some people view them as weedy (they can crowd a moist location) even though

they're providing food for birds including goldfinches, blue jays, chickadees, and sparrows. Birches can also be important nesting sites for red-tailed hawks and vireos, as well as cavity nesting sites for chickadees and woodpeckers. Strips of birch bark are the main building materials used by vireos for their nests, while other birds and squirrels use the bark to make nests and line dens.

Humans can drink the sap and make sugar, syrup, birch beer, wine, or vinegar out of it. You can make a tea from the root bark, leaves, or branch tips or eat the tips. Very young leaves can be eaten or used for flavoring. Birch sawdust can be added to flour to extend it. The inner bark, or cambium, is edible and can be used as a flourlike substitute (but it won't rise).

A hardwood, birch has been used for furniture. And you can make cups to baskets to canoes out of the bark. The wood, solid or rotten, can make a smoky burn to cure fish and meat, or the wood can be used for a fawn-colored dye. (Birch wood catches fire even if wet.) The fungus known as Birch Polypore (*Fomitopsis betulinus*), used for sharpening knives, grows only on birches. The species's wintergreen aroma comes from methyl salicylate, which is closely related to aspirin and has medicinal applications. The Creek used the black birch to treat tuberculosis; the Catawba boiled buds and added sulfur to make a salve to treat ringworm and sores; the Alabama boiled the bark to treat sore horse hooves; and the Cherokee chewed the leaves or made a tea from them to treat colds, dysentery, and urinary issues. Birch oil was also used to treat dandruff and as a perfume.

One curious fact you may not know is that birch resin, or tar, was the first superglue. Archaeological research shows it has been used for at least 80,000 years: An extant Neanderthal spear point has a thumbprint in the tar. There also exists 11,000-year-old bits of birch tar with human teeth marks ... crude chewing gum. Ancient Greeks used the tar to mend broken pottery. Birch tar is made not from the sap but rather the bark, heated in an

oven with little air (similar to making charcoal). The resin is solid at 65°F, moldable at 85°F, a stiff putty at 105°F, a soft sticky putty at 135°F, and boils at 352°F. When it cools, it's waterproof and not brittle.

Bird Pepper

Capsicum annuum var. *glabriusculum*

NOTABLE NUTRIENTS OR USES Antioxidants, capsaicin, vitamin C, beta-carotene, vitamin E

SAFETY NOTES As with other hot peppers, wash your hands after handling.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Shrub 3–10 feet tall with ovate to ovate-lanceolate pointed leaves 0.5–2 inches long (though may be as long as 5 inches). Flowers white, yellow-green, or lavender; five-lobed; to 0.5 inch wide. Fruit round, conical, or elongated and pointed, 0.5–1 inch long, may change from white to yellow then purple to red, nearly hollow, a few small seeds, very pungent.

TIME OF YEAR Seasonal in northern climes, year-round in warmer areas

RANGE Arizona east to Florida and then up the coast to New York and Connecticut

ENVIRONMENT Hummocks, waste places, cultivated ground

METHOD OF PREPARATION Fruit cooked in the same way as grocery-store peppers; leaves steamed

Green Deane's Notes

Research shows these peppers, also called wild chiles, have more than twice the antioxidant content of habanero peppers, with 36 mg per gram dry weight. Their nutrients also include vitamin C (as ascorbic acid), beta-carotene, vitamin E, and some B vitamins.

Nutrition Notes

Per 100 grams

30 calories, 0 g fat, 0 g cholesterol, 7 g carbohydrates, 1.5 g protein, 1.1 g fiber, total fat 0.2 g, 0 g saturated fat

Vitamin A	1180 IU
B1	0.09 mg
B2	0.09 mg
B3	0.95 mg
B5	0.061mg
B6	0.278 mg
B9	0 mg
Folate	23 mg
Vitamin C	242 mg
Vitamin E	0 mg
Vitamin K	14.3 mg phylloquinone
Calcium	18 mg
Copper	0.174 mg
Iron	1.2 mg
Magnesium	25 mg
Manganese	0,237 mg
Phosphorus	46 mg

Potassium	340 mg
Selenium	0.5 mg
Zinc	0.3 mg
Choline	11.1 mg

The above data pertains to the very similar *Capsicum annuum*.

The plant's ripe fruit is used as seasoning, and its leaves can be cooked as greens. Bird peppers have been used for a very long time by Indigenous cultures in the US, and in Africa their fruits or leaves are eaten as an antidote to poisonous fish.

Bird peppers get their flavor from capsaicin, a alkylamide, and rate between 50,000 and 100,000 units (with an average of 60,000) on the Scoville heat scale—hotter than Tabasco, serrano, or jalapeño peppers.

Biscuitroot

Lomatium spp.

NOTABLE NUTRIENTS OR USES Carbohydrates, potassium, calcium, sodium, magnesium

SAFETY NOTES An herbal supplement made with *L. dissectum* has been linked to a case of skin rash and carries a warning not to take if pregnant or breastfeeding. See note below about confirming your species ID.

NATIVE STATUS Native.



Nutrition Notes: *L. cous*

Per 100 grams

Fresh: 127 calories, 0.4 g fat, 30 g carbohydrates, 1 g protein, 2.6 g fiber;

Dried roots: 371 calories, 1.2 g fat, 87.2 g carbohydrates, 3.4 g protein, 7.9 g fiber

Vitamin B1 (thiamine)	0.12 mg (dried roots)
Vitamin B2 (riboflavin)	0.10 mg (dried roots)
Vitamin C	17 mg (fresh), 8 mg (dried roots)

Calcium	79 mg (fresh), 88 mg (dried roots)
Copper	0.2 mg (fresh), 0.8 mg (dried roots)
Iron	3.6 mg (fresh), 2.6 mg (dried roots)
Magnesium	57.2 mg (fresh), 15.1 mg (dried roots)
Potassium	200 mg (dried roots)
Sodium	70 mg (dried roots)
Zinc	0.8 mg (fresh), 1.9 mg (dried roots)

Green Deane's Itemized Plant Profile

IDENTIFICATION *Lomatium dissectum* (Fern-Leaf Biscuitroot), perennial to 5 feet tall with a thick taproot. Leaves mostly basal with long stems then finely divided. Blossoms in an umbel with yellow-to-red flowers. Fruit look like pumpkin seeds. Two varieties exist, long and short fruit stalk.

TIME OF YEAR Flowers in April and May, roots when you find them

RANGE West of the Mississippi

ENVIRONMENT It likes being near mountains or high deserts, is found with sagebrush and pinyon–juniper woodlands. Drought tolerant

METHOD OF PREPARATION Roots baked or dried and cooked

Green Deane's Notes

There's little doubt that biscuitroot is edible: Native Americans ate at least 21 species of them. The USDA lists 87 species of *Lomatium* in North America. Many foraging references skip over this genus, perhaps because of the nomenclature diversity. *Cornucopia II*, an encyclopedia of edible plants, lists at least six well-consumed species: *L. californicum*, *L. dissectum* (the most widespread), *L. macrocarpum*, *L. nudicaule*, *L. triternatum*, and *L. utriculatum*.

There are a bunch of species worth knowing and being on the lookout for, even if sorting them out is an issue. You have to work with the species you have on hand to see exactly which part is used and how. A local expert can

help. The plant's roots and leaves are usually edible raw, dried, or cooked, depending on the species. Cooked mashed roots can be formed into "bread" and roasted. Roots are boiled or dried and roasted.

Bitter Cress

Cardamine spp.

NOTABLE NUTRIENTS OR USES Potassium, vitamin C, iron, selenium, copper, calcium, flavonoids

SAFETY NOTES Oil pressed from the seeds can contain erucic acid, a toxin. Also, these plants can bioaccumulate toxins, so collect from unpolluted areas.

NATIVE STATUS Some species are native; others are introduced.



Nutrition Notes: *C. hirsuta*

Per 100 grams

22.5 calories, 0.24 g fat, 1.7 g carbohydrates, 4 g protein, 1.64 g fiber

Vitamin C	35.62 mg
Calcium	6.2 mg
Copper	1.62 mg
Iron	6.1 mg
Magnesium	5.6 mg
Nickel	3.60 mg

Potassium	10462.28 mg
Selenium	1.83 mg
Sodium	100.48 mg
Zinc	0.30 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Varies by species but often is leggy, has narrow leaves, small four-petaled flowers, seeds in pods on stems. Depending on species and even plant, leaves range from tiny to medium-size; may be pinnate or bipinnate; have smooth or toothy edges; and be either low-growing, basal, or growing on upper part of the stem. *Cardamine pensylvanica*, scraggly plant to 2 feet, weak taproot, tiny white flowers, no more than 1/8 inch across. Silique seedpods, middle membrane, many seeds. Basal leaves and middle leaves long, deeply lobed, with great variation. Leaves have three distinct veins. Multiple stems, upright or spreading, branched, green to purplish, round to angled in cross section, hairy toward base. Upper stem can be nonhairy, lower stem can have fuzz.

TIME OF YEAR Flowers April to October, depending on location, leaves and seedpods for several months. In warmer areas it likes the winter.

RANGE Europe and North Africa; a variety of cresses can be found in the US.

ENVIRONMENT Typically, damp in the wild, including low spots on lawns or around flowing water. Some species like it dry.

METHOD OF PREPARATION Raw, cooked, pickled

Green Deane's Notes

The first time I saw bitter cress, I knew it had to be edible. Plants are in families, and my plant looked like a lot of wild edibles in the Brassicaceae (aka Cruciferae) family: scrawny, with skinny little leaves, diminutive four-

petaled flowers, seeds in a pod on stems, and peppery leaves. Bitter cress, which also goes by the name cardamine scientifically and commonly, is in this family that includes mustard and radish.

No doubt there is one if not several cardamines near you: *C. amara*, *C. concatenata*, *C. diphylla*, *C. flexuosa*, *C. hirsuta*, *C. mazima*, *C. oligosperma*, *C. parvifolia*, *C. pensylvanica*, *C. pratensis*, *C. rhomboidea*. There are perhaps 200 members of the genus worldwide, and four in the United States are endangered—*C. constancei*, *C. incisa*, *C. micranthera*, and *C. pattersonii*—so harvest conscientiously. Under cultivation, *C. pensylvanica* (Pennsylvania Bitter cress) can be coaxed to grow to more than a yard high and wide and trained into a round shrub. Oddly, while it prefers dampness in the wild, when raised intentionally it does not like to be wet and should be watered moderately.

On many bitter cress, the entire plant is edible; for some, only the leaves or roots are. Bitter cress really isn't bitter—at least the ones I've had weren't. Older leaves should be cooked, but the young leaves can be consumed raw. Seedpods can be eaten raw or pickled, and some roots make a good horseradish substitute when they are ground up and mixed with vinegar and salt.

Nutritionally these plants pack a lot: They are just over one quarter protein dry weight, and about 14 mg per gram consist of flavonoids, phenolic acids, and carotenoids. A 2011 report showed significant measurements of vitamin C, potassium, magnesium, and, to a lesser extent, calcium. Based on nutritional analysis of *C. hirsuta*, cardamine offers an amazing amount of potassium—two to three times your daily need. When one considers that most Americans don't meet their daily need for potassium, these little mustards might be nice to know.

Six Native American tribes, including the Ojibwa and Cherokee, used different species of *cardamine*. The Iroquois ate it raw with salt or cooked,

and mashed the roots and used them to treat headaches, colds, low appetite, heart problems, and injuries. The Algonquin gave a cardamine tea to children with fevers, and the Delaware drank the tea for upset stomachs.

Bitter Lettuce

Launaea intybacea

NOTABLE NUTRIENTS OR USES Calcium, magnesium, iron, manganese, zinc; it also has many bioactive phenolics

SAFETY NOTES See cooking notes below.

NATIVE STATUS Introduced in Florida and Texas



Nutrition Notes

Per 100 grams

160 calories, 40 g carbohydrates, 24 g protein, 10.7 g fiber

Calcium	2070 mg
Copper	1.45 mg
Iron	22 mg
Magnesium	437 mg
Manganese	9.9 mg
Zinc	3.1 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Annual herb 1–5 feet tall with succulent branching stems and milky juice. Alternating leaves 4–12 inches long in a basal rosette; lettuce green, lobed, toothed with soft, red-tipped spines on the edges. Flowers yellow, sometimes white, in erect heads in branched clusters. Seeds $\frac{1}{8}$ inch wide, ribbed, spiny.

TIME OF YEAR Year-round

RANGE Africa; naturalized in Asia, the Americas, and elsewhere

ENVIRONMENT Roadsides, coastal strands, agricultural lands

METHOD OF PREPARATION Cooked as greens, fruit raw or as ingredient

Green Deane's Notes

Bitter Lettuce is not a lettuce (*Lactuca*), but it is bitter. It's had a lot of names because every botanical wunderkind thinks his powers of observation and classification are better than those of all botanists before him. One common name is Achicoria Azul, which means Blue Chicory, although its flowers are not blue.

Often listed as an invasive weed, Bitter Lettuce is a tenacious plant, very adaptable to dry conditions. It starts out as a rosette, then sends up a leafy flowering stalk. After seeding, it develops new growth from the base of the stem or root and can take on a bushy appearance. The plant can keep producing new rosettes and producing new shoots from the root for several years.

Don't be surprised if you have to boil leaves half an hour in a lot of water to make them palatable. They do *not* taste good raw. The plant's fruit can be eaten raw and made into jam, jelly, and wine.

Blackberry

Rubus spp.

NOTABLE NUTRIENTS OR USES Potassium, calcium, phosphorus, vitamin C, omega-3 and -6 acids

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Nutrition Notes

Per 100 grams

52 calories, 1.07 g fat, 9.84 g carbohydrates, 0.84 g protein, 3.2 g fiber

Vitamin A	46 IU
Vitamin B1 (thiamine)	0.06 mg
Vitamin B2 (riboflavin)	0.144 mg
Vitamin B3 (niacin)	0.314 mg
Vitamin B5 (pantothenic acid)	1.258 mg
Vitamin B6 (pyridoxine)	0.039 mg
Vitamin B9 (folic acid)	11 mcg
Vitamin C	4.7 mg

Vitamin E	0.91 mg
Vitamin K	5.9 mcg
Calcium	5 mg
Copper	0.222 mg
Iron	0.21 mg
Magnesium	4 mg
Manganese	0.287 mg
Phosphorus	11 mg
Potassium	75 mg
Sodium	6 mg
Zinc	0.15 mg
Beta-carotene	27 mcg

Green Deane's Itemized Plant Profile

IDENTIFICATION Generally a woody shrub with 3- to 6-foot-long canes that grow up but often bend over, sometimes rerooting. Canes are green at the growing tip, brown or reddish brown elsewhere. Has stiff prickles, straight or slightly curved, and alternate long-stemmed leaves, each with three or five leaflets up to 4 inches long and 3 inches across, coarse, double-serrated edges (teeth on teeth), may have scattered white hairs on the upper surface, lower surface light green and hairy. Flowers have little or no fragrance. Fruits aggregate (lots of little flowers make lots of little berries that comprise the whole fruit); berries progress from white or green to red then black.

TIME OF YEAR Spring to late summer, depending on area

RANGE Eastern North America and the Pacific Coast

ENVIRONMENT Full sun, neither too wet nor too dry

METHOD OF PREPARATION Fresh or as an ingredient; leaves dried for tea

Green Deane's Notes

Anyone who forages will eventually collect blackberries—and blackberry scratches. What most people don't know is that the blackberry is a two-year plant. The first year it sends up a tall cane covered with prickles. The next year it flowers and has blackberries, then dies. Some would argue that the cane stays on for a third year with its prickles to protect the patch (though there are naturally prickless blackberries).

Blackberry leaves have been included in the *US Pharmacopoeia* for treating digestive problems, particularly diarrhea. Their dried leaves make an excellent tea even when you're healthy. A 2007 study showed a blackberry leaf extract helps reduce the formation of wrinkles. But the best use of blackberries is eating them fresh on the trail. Take them home and they can be frozen; canned; and used for making juice, wine, ice cream, pie, jelly, or jam. Picked unripe berries will not ripen.

For making tea, leaves can be dried as is or fermented, which improves the flavor significantly. Running fresh leaves through the rollers of a pasta machine is a good way to crush them for fermentation. Young shoots can be peeled and boiled in one or more changes of water.

Just how many species of blackberries there are is anyone's educated or uneducated guess. Some say a few species with a lot of varieties, and others say 250 or so species. Generally, ones that crawl are in one group (dewberries) and those that grow upward are in another group. There also are numerous unintentional and intentional hybrids, such as the marionberry, loganberry, youngberry, and boysenberry.

Dewberries are actually lowlife blackberries. Growing on a woody vine that reaches 15 feet in length, they are found from Pennsylvania south to Florida and west to Colorado and Texas. The southern dewberry (*R. trivialis*) and the more widespread Common Dewberry (*R. flagellaris*) both have prickles, but only the southern dewberry has bristles. What's the difference between prickles and bristles? It's the amount of little spines you catch your fingers

on: A few are prickles, a lot are bristles. Also, the southern dewberry is evergreen, while the Common Dewberry is not.

The main difference between the blackberry and the raspberry, which is also in the *Rubus* genus (see [page 237](#)) is that when you pick the fruit of the blackberry, the bitter center comes with it. Raspberries leave their centers, which is why they seem sweeter and don't store as well as blackberries. For all their natural protections, blackberries (and raspberries moreso) will mold within a couple of days of picking if not refrigerated. Do not wash until use because that promotes mold.

Black Ironwood

Krugiodendron ferreum

NOTABLE NUTRIENTS OR USES No nutritional data available.

SAFETY NOTES No known safety issues.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Shrub to small tree 20–30 feet tall with trunk 10 inches thick, bark ridged and scaly. Leaves opposite or alternate, ovate, may be notched at tip, deep green, glossy above, pale below, to 2.5 inches long. Greenish flowers in small clusters; many fruits, nearly round, 0.25-inch-long, black, glossy, thin-skinned, juicy, sweet flesh, each with single stone.

TIME OF YEAR September to November (for fruits). Flowers late spring/early summer, leaves persist several years. Evergreen if it has plenty of water, though it can drop leaves in time of drought.

RANGE Black ironwood is found in eastern and southern Florida, throughout the Caribbean and from southern Mexico to Honduras.

ENVIRONMENT Hummocks; does not like salt water

METHOD OF PREPARATION Fruit, raw

Green Deane's Notes

Green twigs of the black ironwood will sink in salt water. It's that dense.

Once esteemed for its hard wood, black ironwood is the heaviest native wood in the United States and among the densest woods on Earth, on par with *Lignum vitae*. It resists disease and termites and will outlast salt spray better than iron. This strong wood does get damaged by hurricanes, probably because it is so unyielding.

Professor Daniel F. Austin, to whose scholarship I owe so much, took a class of undergraduates to a particular hummock for 31 years in a row, and a trunk-size piece of blown-down black ironwood heartwood there remained unchanged over the decades. His last class and the authorities saw to it that when Austin retired he was given that piece of heartwood.

In the buckthorn family, black ironwood is also called leadwood because, when it is cut, the aroma given off is nearly identical to the smell of molten

lead. It is also monotypic—the only species in its genus. In the more rural Caribbean, it is still used for tools and was used for making weapons, such as bows, arrows, and lances. Because of its density it takes a high polish and is favored by turners. The sapwood is light brown and streaked, with the heartwood orange-brown to dark brown. The fruits look similar to brown M&M's and are sweet.

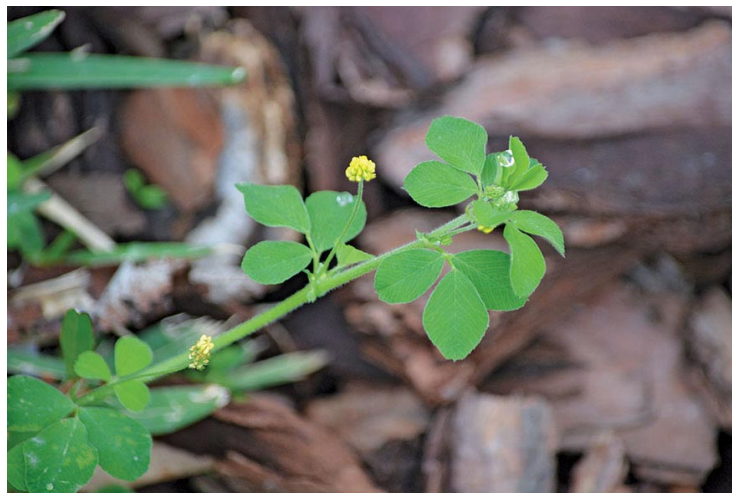
Black Medic

Medicago lupulina

NOTABLE NUTRIENTS OR USES Protein, potassium, calcium, magnesium, phosphorus

SAFETY NOTES Related to alfalfa, which contains L-canavanine (see Deane's Notes) and also is not recommended for pregnant women or those with lupus or a weakened immune system, and it can be dangerous to children, the elderly, and those with chronic disease. Given the above, obviously consume with caution.

NATIVE STATUS Introduced in the eastern US as early as 1807; went west with expansion of the nation



Nutrition Notes

Leaves, per 100 grams

calories NA, 5.2 g fat, 23.3–33.4 g protein, 3.3 g fiber, 10.3 g ash

Calcium	1330 mg
Magnesium	450 mg
Phosphorus	300 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Multibranched, slender, prostrate, downy stems (white hairs) 12–24 inches long, spreads low to the ground, does not root from nodes. Leaflets of three, center leaflet on separate petiole and longer than other two. Tightly coiled one-seed black pod. Resembles *Trifolium dubium* (hop or Suckling Clover) but has longer leafstalk and leaflets are often bristle-tipped; *Trifolium dubium* stems are almost hairless and reddish.

TIME OF YEAR Flowers April to August, seeds ripen July to September.

RANGE Europe and western Asia, naturalized in the US and Canada

ENVIRONMENT Roadsides, waste areas. Not frost-tender

METHOD OF PREPARATION Seeds dried and/or ground into flour, leaves cooked

Green Deane's Notes

I debated a long time whether to include black medic on my website or in a book as an edible. The species itself has not been implicated in any health condition that I know of, but other species in the *Medicago* genus (alfalfa, for example) contain L-canavanine, an amino acid that can cause abnormal blood cell counts, spleen enlargements, or a recurrence of lupus in those who had the disease under control. Heated alfalfa did not appear to cause any problems, so the thinking is heating destroys the L-canavanine's toxic activity.

As a rule, cooking the *Medicago* genus is a good idea. No one really knows about black medic (sometimes spelled medick) in particular. The seeds of the black medic might contain trypsin inhibitors, which could reduce its nutritional qualities.

Native Americans in California reportedly used to parch black medic seeds and grind them into a flour. In Eurasia, where the plant is native, it was used as a potherb. Oddly, there seems to be no mention of the Native Americans eating it as a potherb (they only ate the seeds) or of Eurasians eating the seeds (they only ate the foliage).

The leaves are chewy and can be cooked as greens. The seeds can be knocked off ripe inflorescences over a sheet pan to collect them if you're going to dry them to make flour.

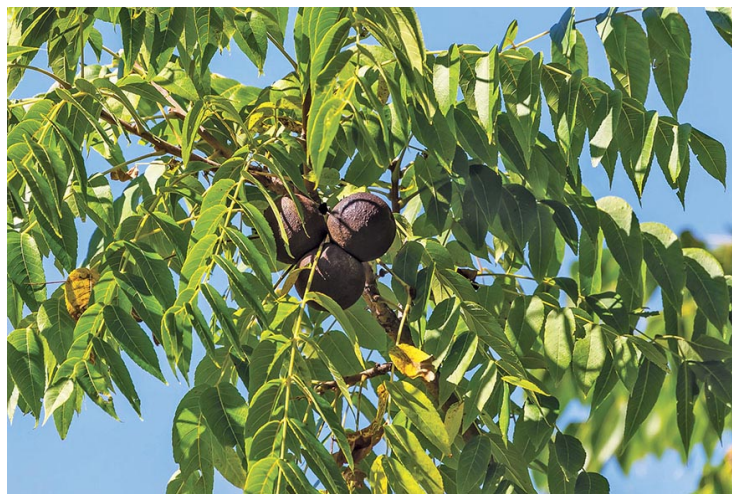
Black Walnut

Juglans nigra

NOTABLE NUTRIENTS OR USES Lipids, potassium, phosphorus, magnesium, calcium

SAFETY NOTES See preparation notes below to avoid mold contamination.

NATIVE STATUS Native



Nutrition Notes

Per 100 grams

619 calories, 59.3 g fat, 9.6 g carbohydrates, 24 g protein, 6.8 g fiber

Vitamin A	40 IU
Vitamin B1 (thiamine)	0.057 mg
Vitamin B2 (riboflavin)	0.13 mg
Vitamin B3 (niacin)	0.47 mg
Vitamin B5 (pantothenic acid)	1.66 mg
Vitamin B6 (pyridoxine)	0.583 mg
Vitamin B9 (folic acid)	31 mcg
Vitamin C	1.7 mg
Vitamin E	2.08 mg

Vitamin K	2.7 mcg
Calcium	61 mg
Copper	1.36 mg
Iron	3.12 mg
Magnesium	201 mg
Manganese	3.896 mg
Phosphorus	513 mg
Potassium	523 mg
Selenium	17 mcg
Sodium	2 mg
Zinc	3.37

Green Deane's Itemized Plant Profile

IDENTIFICATION Large tree with compound leaves, alternately arranged on the branches. Each leaf has 15–23 leaflets; terminal leaf often missing; leaf surface dull with a slightly hairy texture on underside.

TIME OF YEAR Late summer to fall. Husk changes from solid green to yellowish green. Nuts are ripe when they show indentation if you press hull with your thumb.

RANGE New England west to Minnesota and south to the Gulf of Mexico

ENVIRONMENT Moist, well-drained soil; along streams, in mixed forests. Method of preparation. Eat raw once hulled and cured

Green Deane's Notes

I didn't see my first black walnut tree until middle age. It so happened that the two places where I've lived the longest, Maine and Florida, are just beyond both ends of the tree's range. I lived a little north of the range in southern Maine and half a state south of the range in central Florida.

However, I visited Alexandria, Virginia, for an extended time in the '90s, and one day while jogging along a park trail I saw a black walnut tree covered with green mana. I went back later that same day and carried home

all that I could (and did so repeatedly for several weeks). Then came the hard work. Walnuts are delicious, but they don't give up easily.

The walnuts most people buy are *Juglans regia*, the "royal walnut." They are also called English walnuts because English merchants popularized them, though they're grown in the Balkans and from Greece to southwest China. The North American walnut, which is smaller and tougher to crack, is *Juglans nigra*. Black walnut trees are valued more for their wood than their walnuts, but they are the most common walnut among foragers. The nutmeat is crunchy and spicy, and it is used in baking, ice cream, and candy.

Round and 2 inches in diameter, black walnuts are usually ready for harvest in late summer or early fall. Try to get nuts off the tree rather than the ground (you can take good ones from the ground). Two pounds of walnuts off the tree will produce about a cup of nutmeat.

To process walnuts, first do what you do with acorns: Put them in water and discard any that float. Kernel quality can be ruined by insects; darker-than-usual husks may be evidence of insect damage. The water test gets rid of most but not all of the grub-infested nuts.

Hulling walnuts is dirty, difficult work. A dye from the husk can stain your hands, clothes, tools, and work surfaces. If the nuts are dry, pound the husks side to side to loosen them. After removing the husks, wash the unshelled nuts and let them dry, which "cures" them. Walnuts have to be cured so they develop flavor. Stack the clean nuts in single layers on a platter or baking sheet, and put it in a cool, dry, ventilated area out of sunlight for two weeks. A nut is cured when the kernel breaks crispy with a sharp snap. If you don't cure the nuts correctly, they will get moldy. After curing, they can be stored shelled or unshelled.

Before shelling walnuts, soak them in hot tap water for a day and then for about 2 hours the next day. Nutmeat can stay good up to nine months in a sealed jar in the refrigerator, two years if frozen. Besides eating the nuts,

you can use their oil, which is pressed out of the nutmeat. I like it on salads; ancient Egyptians used it for embalming fluid (!). By the way, don't compost walnut hulls or shells because they can suppress the growth of other plants, including tomatoes and apples.

Bladder Wrack

Fucus vesiculosus

NOTABLE NUTRIENTS OR USES Iodine, sodium, potassium, calcium, magnesium

SAFETY NOTES See note on species variability below.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION A perennial attached seaweed, with a hard flattish root, frond ranges from a few inches to 4 feet in length and to an inch in width, flat with midrib throughout length, occasionally twisted like a spiral, branches often notched at the end. Air sacs vary from pea-size to marble-size, in pairs, at irregular intervals; sometimes two or three pairs are next to each other, rarely totally absent; firmly attached to the bottom, preferably to rocks

TIME OF YEAR Year-round

RANGE On Atlantic coast, North Carolina north; in western United States, central California northward

ENVIRONMENT Shoreline, between high and low tides; prefers protected areas

METHOD OF PREPARATION Raw, boiled or steamed, dried

Nutrition Notes

Powdered, per 100 grams

53 g carbohydrates, 6.6 g protein, 6.6 g fiber, 3.3 g lipids

Calcium	1500 mg
Copper	0.33 mg
Iron	67 mg
Magnesium	867 mg
Manganese	7.6 mg
Phosphorus	100 mg
Potassium	2900 mg
Sodium	2700 mg
Zinc	3 mg
Chromium	2 mg
Iodine	46 mg

Green Deane's Notes

Bladder wrack can wrack your brain. Why? It has fewer bladders in some places than others—because the number of bladders varies with wave action in the waters. Less waves mean more bladders; more waves, fewer bladders.

Also called sea wrack and rockweed, bladder wrack is nutritious, edible raw and cooked. It's also medicinal, and like many things that have medicinal applications, it has a strong flavor. Bladder wrack lowers plasma cholesterol levels and has been used in estrogen therapy. As bladder wrack is high in potassium, it also has been used as is for fertilizer.

Bladder wrack can be used sparingly in soups and other dishes, depending on your like or dislike of the flavor. It tastes like salty fish. Bladder wrack can also be dried; upon dehydration, it turns black. (Slow roasting after drying with a little oil until brittle helps.) And it can be eaten raw, though try to get it from clean ocean waters. In large amounts it can have a laxative effect.

Fresh, it's green to orange to olive to brown—the brighter, the fresher. To my knowledge, all *Fucus* are edible, but they vary significantly. Consult a local expert. Sargassum used to be a *Fucus*, *F. natans*, but now has its own genus and is *Sargassum natans*. Sargassum can bioaccumulate arsenic and cadmium, so consuming it isn't recommended.

Blolly (Beeftree)

Guapira discolor

NOTABLE NUTRIENTS OR USES No nutritional data available.

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION A shrub or sometimes a tree to 40 feet (tallest known is 55 feet), compact, with round crown and many crooked trunks. Leaves opposite or alternate, elliptical to ovate, light green in color, leathery simple, 1–2 inches long, 0.5–1 inch wide, wavy edge, rounded or notched at the end, on slender stalks, grooved, start thin then thicken. Veins obscure except for central vein, which is yellowish green and translucent when held up to the light. Flowers bell-shaped, lacking petals, to a ½ inch long. Fruit slender, oval, juicy, a ½ inch long, red, 10-ribbed, one tan cylindrical seed.

TIME OF YEAR Summer and fall; farther south, all year

RANGE Florida and parts of the Gulf Coast

ENVIRONMENT Hummocks, coastal shrubs, pine lands, landscaping

METHOD OF PREPARATION Fruit raw

Green Deane's Notes

Blolly is better known for mud and pigeons than its fruit. White-crowned pigeons are very fond of the berries—second only to figs as the pigeons' favorite—so people who want to spot the birds can seek out the trees.

As for mud ... The tree's twigs, which are strong and flexible, were used to make wattle. That's when you fill a frame with a lattice (wattle), then mud it in (daub). Wattle and daub is a construction technique at least 6,000 years old and still in use in many parts of the world, and it's making a comeback because it's "sustainable."

The name blolly is from the word "loblolly," a mire—like the mudholes where blolly grows in thickets. In the Four o'clock family, one confusing aspect about the blolly fruit is that it is faintly ribbed. It has 10 ribs, but you would not notice them if they weren't pointed out to you. Unlike many small fruits, the blolly fruit stands out on the tree and is quite noticeable.

Tanagers, catbirds, warblers, and iguanas like it. Humans can eat the ripe fruit out of hand.

Blueberry

Vaccinium spp.

NOTABLE NUTRIENTS OR USES Vitamin A, lutein and zeaxanthin, vitamin K, vitamin C, potassium

SAFETY NOTES No known safety issues from fruit, but ingestion of blueberry leaves can cause vomiting, diarrhea, stomachache or constipation.

NATIVE STATUS Native



Nutrition Notes

Per 100 grams

14.49 g sugar, 0.75 g protein, 0.33 g lipids

Vitamin A	54 IU
Vitamin B9 (folic acid)	6 mcg
Vitamin C	9.7mg
Vitamin K	19.3 mcg
Calcium	6 mg
Magnesium	6 mg

Phosphorus	12 mg
Potassium	77 mg
Beta-carotene	32 mcg
Lutein and zeaxanthin	80 mcg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Vaccinium myrsinites*, small shrub 1–3 feet tall, leaves alternate, ovate to elliptic, to 0.75 inch long, sometimes with fine, sharp teeth and spiny tips. Young grayish foliage often purple-tinged. Flowers red or red-purple, in small, compact clusters. Berries round and blue or blackish. *V. darrowii* looks similar, but the base and tips of the blossoms are redder.

TIME OF YEAR Blooms in late May, fruit in the summer

RANGE North America and Central America

ENVIRONMENT Saw palmetto prairies, flat pine woods, and near oaks

METHOD OF PREPARATION Berries; too numerous to name them all—jelly to wine, pie to confit, and much more. And, of course, they can be eaten raw.

Green Deane's Notes

Blueberrying was a family tradition. The only debate was, did you pick them clean or did you pick leaves, bugs, and all, then clean the haul later? My mother preferred the clean method. As a child, she went with her mother to visit a friend who had just finished picking a lot of blueberries. My mother was asked if she wanted some and said yes, a big bowl. The bowl of blueberries was delivered, then milk poured on them. That caused all the twigs, leaves, and bugs to float to the surface, making the berries virtually impossible to eat. My mother was punished and told her eyes were bigger than her belly. So years later, we picked clean.

We berried in two very different areas with two very different kinds of blueberries. Lowbush blueberries were extremely common, covering huge fields, hundreds of acres. The fields were burned every year to ensure a good crop of blueberries, which prefer poor acid soil and ashes. In late summer, rows were marked by string. Pickers with hand rakes would come in and strip a field in a couple of days. They always focused on the productive center of the field, leaving the edges. We raided those edges on the weekend, collecting quarts of ignored fruit. But there were other blueberries as well.

High on a ridge in Pownal, Maine, there's a north-south granite ledge showing here and there. On that ledge were the best specimens of highbush blueberries I've ever seen. Tall shrubs 6-8 feet high loaded with large, sweet blueberries. Picking was fast, if there weren't bears around ... which brings me to a story about my Great-Aunt Myrt, born in the 1880s.

Like all eight of her siblings, Myrt caught scarlet fever when she was young and as a consequence was nearly stone-deaf. One day she was out with the family picking blueberries. A bear came along and started eating the berries right next to Myrt, who kept right on picking. As you may imagine, trying to get Myrt's attention by yelling did not work, nor did it scare the bear. When Myrt had filled her berry bucket, she left the patch and joined the others. "Didn't you see that bear?" my grandfather shouted. "Yes," Myrt shouted back, "but I wasn't going to let that damn bear have my blueberries." Feisty Myrt lived into her 90s. No doubt the healthful blueberries helped.

Blueberries are fairly high in sugar, but they are low in lipids (fat) and have about ¼ gram of both omega-3 and omega-6, healthy fatty acids. They get their blue color from lutein and zeaxanthin (pigments that protect eye health) as well as beta-carotene (a pigment with antioxidant power).

The most common blueberry where I live now in Florida is *Vaccinium myrsinites*. There are no fields or even large patches of them, just a few short bushes here and there near oaks and pines. Another local is *V. stamineum*, deerberry (see [page 113](#)). The highbush blueberry of my youth, *V. corymbosum*, doesn't get quite this far south.

All 450 or so species of *Vaccinium*, which are in the heath family, have a five-point-starshaped calyx on their fruit. Some Native Americans believed that the Great Spirit sent the “star berries” down from the heavenly sky to feed children in times of starvation. Medicinally, decoctions of blueberry leaves have been used to treat sore throats and diarrhea, but they can be toxic if too strong.

Brookweed

Samolus valerandi

NOTABLE NUTRIENTS OR USES No nutritional data available

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Low to short creeping perennial, slow-growing, 8–10 inches high; stems branched or unbranched, erect, light-veined; a basal rosette of oval alternate leaves along the stem; white cup-shaped blossoms 1 inch wide, stalked, borne in lax racemes, five petals joined at halfway, tiny bracts near middle of the short stem; stem leaves extend into the inflorescence.

TIME OF YEAR Flowers May to September, depending on climate; young leave when present. Small pods ripen, darken, then turn brown.

RANGE Worldwide

ENVIRONMENT Watery places (wet grasslands, edges of streams, ditches), can thrive in salty conditions. Grows on wet gravel and can grow submerged.

METHOD OF PREPARATION Young leaves raw or cooked

Green Deane's Notes

Brookweed is an ancient plant found throughout most of the world that few people know a lot about these days. It has a history as an edible in Europe and is still served there. In the Catalonia region of Spain, for example, it is a common salad ingredient, usually with two or three other greens.

Young leaves are soft, spinach-like. They taste bland when very young but quickly develop a bitter flavor, which might explain their absence from dinner menus. Tossed in salads or cooked, they're usually combined with several other greens—an addition to, not the main flavor. In parts of Africa, Brookweed is famine food, eaten when preferred food is not available.

Medicinally, *S. valerandi* has been used as an astringent and a laxative. It's been mentioned for scurvy, so we know it has some vitamin C. Brookweed has also been used to heal wounds, rashes, chaps, kidney stones, and ringworm.

Bulrush

Schoenoplectiella spp., *Schoenoplectus* spp., *Scirpus* spp.

NOTABLE NUTRIENTS OR USES Sugar, starch, fiber, protein, potassium

SAFETY NOTES No known safety issues

NATIVE STATUS Native across the southern United States and in California and Oregon



Nutrition Notes: *Schoenoplectiella articulata*

Seeds, per 100 grams

312 calories, 6.15 g fat, 80.56 g carbohydrates, 0.15 g protein, 20.53 g fiber

Copper	0.10 ppm
Iron	0.85 ppm
Manganese	1.21 ppm
Potassium	62.55 ppm
Zinc	0.13 ppm

Green Deane's Itemized Plant Profile

IDENTIFICATION When mature, 5–13 feet tall; leaves are slender, grasslike; stem long, pithy; flowers in a spikelet looking like orange-brown scales

TIME OF YEAR Shoots and pollen in spring; seeds, bottoms of stalks, and roots best in fall

RANGE Throughout North America

ENVIRONMENT Where it is wet—rivers, ponds, ditches, lakes, close to shore or farther out

METHOD OF PREPARATION Various parts raw, boiled, dried into flour

Green Deane's Notes

The bulrush has a public relations problem. It is found in the same environment as the cattail, can be used the same way, and tastes better, yet one doesn't hear the bulrush praised as much as the cattail. It should be. At 8% sugar, the bulrush is sweeter than the cattail.

Young shoots in spring and the tender parts inside the base of the stalks can be eaten raw or boiled. The large, horizontal rhizomes can be eaten raw or cooked. Natives dried them in the sun, then pounded them into flour. Bulrush pollen can be made into flour for bread, pancakes, or mush. The seeds can be parched and consumed or ground and used like flour. Unripe flower heads may be boiled, and root tips can be roasted like potatoes. Also like potatoes, the Bulrush is starchy—5.5% of its food value is starch.

Indigenous people cut rushes for mats and thatching that was insulated and waterproof. Bulrush "shoes" helped Indigenous hunters walk over muddy flats without sinking in. Bulrushes are woven with grapevines to form a floating platform a person can stand on and pole over water. A similar rush was used by Thor Heyerdahl when he made his *Kon-Tiki* raft.

Though called a rush, the plant is a soft-sided sedge. If you haven't heard the rhyme to help you remember the difference between sedges, reeds, and

grasses: “Sedges have edges, reeds are round, grasses have holes all the way down.” Bulrush is occasionally confused with pampas grass, but pampas grass does not like to get its feet wet, has a central ball root system—not a rhizome—and has very sharp edges.

The bulrush can be cultivated by planting rhizomes a yard apart in moist, rich soil (but not standing water) or by broadcasting seed in such soil, then raking in to $\frac{1}{4}$ – $\frac{1}{2}$ inch. Seeds are commercially available.

Bunchberry

Cornus canadensis

NOTABLE NUTRIENTS OR USES Calcium, phosphorus, magnesium, pectin

SAFETY NOTES Take care not to accidentally pick the deadly toxic baneberry (also known as dollseye); it is low-growing and has bunches of green berries (which later turn red or white). Baneberry can stop your heart.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Spreading perennial subshrub with terminal whorls of oval or lance-shaped leaves. Tiny bunch of flowers over four white bracts above six dogwood leaves. Flowers in May and June, sometimes in autumn.

TIME OF YEAR Late summer to early fall

RANGE Northern portions of North America and Asia

ENVIRONMENT Northern forests; moist, well-drained soil; ground never warmer than 65°F or colder than 28-below

METHOD OF PREPARATION Out of hand or made into jelly



Nutrition Notes

Per 100 grams

52 calories, 0.8 g fat, 16.6 g carbohydrates, 0.6 g protein, 5.2 g fiber

Vitamin A	4 RE
Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.03 mg
Vitamin B3 (niacin)	0.5 mg
Vitamin C	2.1 mg
Calcium	52 mg
Copper	0.1 mg
Iron	0.6 mg
Magnesium	12 mg
Manganese	0.1 mg
Phosphorus	19 mg
Sodium	0.4 mg
Zinc	0.1 mg

Green Deane's Notes

In late summer, a bunch of round red fruit appears, giving the plant its name. This humble plant produces bunches of red berries well-known for being one of the most flavorless products of the northern forest.

My mother picked bunchberries because her mother had picked them, and my grandmother picked them because her mother did, and my great-grandmother had no doubt learned it from *her* mother. That gets us back a couple of centuries.

The smallest member of the dogwood family, *Cornus canadensis* has several common names, including bunchberry dogwood and dwarf dogwood. *Cornus unalaschkensis* is the Western Cordilleran Bunchberry. The fruit is also called the puddingberry because New England cooks would add a few bunchberries to a pudding to give it color and help it jell. The little berries have a decent dose of pectin so they make a good jelly. Their texture is mealy, and each berry has one or two seeds.

The “flowers” of the dwarf dogwood, like those of most dogwoods, aren’t what they appear to be. What look like white “petals” are bracts. Clustered in the center, as the berries will later be, are many tiny white-to-purplish flowers. The bunchberry has the fastest flowers in the world, according to research from 2005, which showed that their pollen can go 22 feet a second when released.

Burdock

Arctium minus, Arctium lappa, Arctium tomentosum

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, calcium, magnesium, vitamin C

SAFETY NOTES Can act as a diuretic or a laxative, see below.

NATIVE STATUS Native to Asia

Green Deane's Itemized Plant Profile

IDENTIFICATION Biannual. First-year plant a low circle of rhubarb-looking leaves with a foul odor. In second year, flowering stalk, bushy, many purple flowers, thistle-like burs. Leaves typically large, ovate, woolly underneath; leaf stalks usually hollow.

TIME OF YEAR Middle of summer to late fall, even after a frost (just mark down where you spot them for later use)



Nutrition Notes

Cooked root, per 100 grams

88 calories, 0.14 g fat, 21.15 g carbohydrates, 2.09 g protein, 1.8 g fiber

Vitamin B1 (thiamine)	0.039 mg
Vitamin B2 (riboflavin)	0.058 mg
Vitamin B3 (niacin)	0.32 mg
Vitamin B5 (pantothenic acid)	0.353 mg
Vitamin B6 (pyridoxine)	0.279 mg
Vitamin B9 (folic acid)	20 mcg
Vitamin C	2.6 mg
Vitamin E	0.46 mg
Calcium	49 mg
Copper	0.08 mg
Iron	1.1 mg
Magnesium	39 mg
Manganese	0.27 mg
Phosphorus	93 mg
Potassium	360 mg
Sodium	4 mg
Zinc	0.34 mg
Betaine	0.2 mg
Choline	14.3 mg

RANGE Native to Europe and Asia; naturalized throughout North America

ENVIRONMENT Sun or part shade, any type of well-drained soil. Grows a huge taproot, so loosened soil is helpful to harvesting. Normally found along roadsides, barnyards, fence lines, disturbed soil, under bird feeders. Like many temperate plants, doesn't like warm climates.

METHOD OF PREPARATION Raw, roasted, boiled

Green Deane's Notes

When I was a kid, I had a miniature corncob pipe. And in it I smoked dried burdock leaf. I think that's why my voice changed when I was 7.

We conspiratorial kids didn't call it burdock. It was "snake rhubarb," and it did resemble the rhubarb in the garden ... somewhat. It was an extremely

common weed in southern Maine where I grew up. My mother found out about the pipe but decided the smoking was punishment enough (she smoked a pipe). The smoke was harsh, hot, dry—and a lot of fun until she knew. Only years later would I return to the plant to eat and grow it. One reason I like burdock is its leaf is large enough to wrap wild food in for cooking in a campfire. Wrap up a trout with some wild garlic and northern bay leaves, and roast in the embers: Life is good.

Nutrition Notes	
Cooked leaves, per 100 grams	
99 calories, 2.88 g fat, 18.06 g carbohydrates, 1.6 g protein, 3.4 g fiber	
Vitamin A	12 mcg RAE
Vitamin B1 (thiamine)	0.009 mg
Vitamin B2 (riboflavin)	0.03 mg
Vitamin B3 (niacin)	0.297 mg
Vitamin B6 (pyridoxine)	0.242 mg
Vitamin B9 (folic acid)	20 mcg
Vitamin C	2.7 mg
Vitamin E	0.71 mg
Vitamin K	4.2 mcg
Calcium	43 mg
Copper	0.08 mg
Iron	0.84 mg
Magnesium	40 mg
Phosphorus	53 mg
Potassium	321 mg
Selenium	0.7 mcg
Sodium	136 mg
Zinc	0.34 mg
Beta-carotene	5 mcg
Choline	12.4 mg

Burdock can make two claims to fame: It was in the original recipe for root beer and was the inspiration for Velcro, since its burrs stick to clothing. It

also inspired a British soft drink known as dandelion and burdock, and is popular as a food in Japan.

It is on the bitter side, though. A layer of bitterness on the outside protects burdock from predators. First-year roots are the prime fare for human consumption, and while they can be eaten raw, slow-roasting them for several hours makes them sweeter. (The cooked roots are called *gobo*.) Later in their first year and even more in their second, the roots become more bitter and woody. Scrub and boil them 20 minutes. Young leaves can be eaten boiled, but you have to like bitter foods. Peeled stems are also edible and not as bitter as the leaves. Young shoots can be boiled until tender, second-year stems peeled before flowering and boiled 20 minutes, and leaf stems peeled and boiled. Seed sprouts are edible too.

Burdock is in the same family as daisies, chicory, thistles, and dandelions. The most common species in North America is the “lesser,” *Arctium minus*. It grows from knee to shoulder height. The Greater Burdock, *Arctium lappa*, can grow to 9 feet high—though it usually doesn’t—and its flowers are larger than those of *A. minus*. The Woolly Burdock, *Arctium tomentosum*, has “fleece” on its flower heads.

Burdock has antibacterial and antifungal applications. Its anticancer properties are similar to broccoli’s and cabbage’s. Burdock is also a diuretic, and gobo can be laxative.

Burnweed

Erechtites hieraciifolius

NOTABLE NUTRIENTS OR USES Potassium, calcium, vitamin C, sodium, iron

SAFETY NOTES A 1939 study found the plant contains pyrrolidines, chemicals that can cause permanent liver damage. It also contains phenols, which can be toxic.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Erect annual to 80 inches; flowers yellow to whitish, $\frac{1}{3}$ – $\frac{2}{3}$ inch long, barely open; inflorescence flat-topped to elongated clusters of drooping heads; fruit a dry seed on a bright-white fluffy powderpuff; leaves alternate, lance-shaped, sharply toothed, sometimes lobed. It has a, uh, *distinctive* aroma.

TIME OF YEAR Blooms early summer to autumn



Nutrition Notes

Per 100 grams

calories NA, 0.08 g fat, 6.96 g carbohydrates, 1.94 g protein, g fiber

Vitamin C	20.62 mg
Calcium	99.54 mg
Iron	3.04 mg
Potassium	529.72 mg
Sodium	5.3 mg

RANGE Native to North America; introduced to Asia

ENVIRONMENT Dry to wet; open woods, partially disturbed sites, fields, lakeshores. Often colonial

METHOD OF PREPARATION Raw or cooked in water

Green Deane's Notes

There are several wild plants you will either like or dislike ... intensely. One is Surinam cherries. Your palate says, "Yes, this is food" or "No way will I ever eat this again." The same can be said for the nutritious Burnweed, *Erechtites hieracifolius*. When I lead classes just for chefs, they go nuts over this species. In my regular classes, folks either think it tastes fine or can't stand it. There are few in-betweens.

In other parts of the world, Burnweed is popular and described as savory and delicious. Widely used in the past and present in Asia, this is not a dainty-flavored plant. Native Americans did not use it for food but rather medicine. One use is treating dysentery.

E. hieraciifolius is plentiful in the spring and summer. Once you know its odor, it is unmistakable. Tall, rank, and in your face, Burnweed is difficult to misidentify. Foul or not, it is as good as any other spring/summer green and is not unheard-of in winter, either. Perhaps the key is proper preparation: It might pair better with Asian cuisine than, say, French. Plant

tops, young leaves, and flower buds can be eaten raw or steamed or boiled. The flavor does moderate on cooking.

This species has many local common names, including goat's chicory, Stickers, Sun's Ribs, fireweed, and Dog Weed. One other common name: pilewort. Folks have used the oil of Burnweed (or a poultice) to externally treat their hemorrhoids. Burnweed puts out the fire.

Butternut

Juglans cinerea

NOTABLE NUTRIENTS OR USES Phosphorus, potassium, magnesium, protein, lipids

SAFETY NOTES Toxic to fish

NATIVE STATUS Native



IDENTIFICATION Tree to 100 feet tall, alternating dark-green leaves in a leaflet up to 20 inches long. Lemon-shaped fruit in bunches of two to six. Oval nuts have thick shells and white kernels.

TIME OF YEAR Nuts usually ready in October. Its spring leaf-out is tied not to temperature but to when daylight reaches 14 hours.

RANGE Northeast

ENVIRONMENT Stream banks (look in bends of streams up from the water), well-drained soil. Can tolerate some rockiness and is the most cold-tolerant walnut species.

METHOD OF PREPARATION Fresh or cooked

Nutrition Notes	
Per 100 grams	
612 calories, 56.98 g fat (1.3 g saturated), 12.05 g carbohydrates, 24.9 g protein, 4.7 g fiber	
Vitamin A	124 IU
Vitamin B1 (thiamine)	0.383 mg
Vitamin B2 (riboflavin)	0.148 mg
Vitamin B3 (niacin)	1.045 mg
Vitamin B5 (pantothenic acid)	0.663 mg
Vitamin B6 (pyridoxine)	0.56 mg
Vitamin B9 (folic acid)	66 mcg
Vitamin C	3.2 mg
Calcium	53 mg
Copper	0.45 mg
Iron	4.02 mg
Magnesium	237 mg
Manganese	6.56 mg
Phosphorus	446 mg
Potassium	421 mg
Selenium	17.2 mcg
Sodium	1 mg
Zinc	3.13 mg

Green Deane's Notes

My mother's favorite wild nut was the delicious butternut. She spoke often of collecting and eating them as one of her fondest childhood memories (that and her mother baking fresh doughnuts for her and her brothers to eat after school). When we visited Guildhall, Vermont, where she grew up on the Vermont–New Hampshire state line, finding butternuts was always on the agenda because there was an orchard nearby.

Also known as the white walnut, the butternut is closely related to the black walnut and the best-flavored of the walnuts. It was prized in my family for homemade butternut ice cream, one of my mother's joys in life. Butternuts can be used in many cooked products, just like other walnuts, and, of course, eaten right out of the shell. The nuts are sticky, in three segments, and hull easily. The husk can be used for a yellow dye.

Juglans cinerea can live around 75 years, and, like *J. nigra* (black walnut), its roots release a phytotoxin, juglone, that keeps many other plants from growing nearby; it is also poisonous to fish. (Using butternut husks for illicit fishing was common enough to be outlawed in several states.) Unfortunately, a butternut canker has been killing off mature trees since 1979. Breeding resistant trees is underway.

Cabbage Palm

Sabal palmetto

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, calcium, magnesium, vitamin E

SAFETY NOTES Be aware of the tough seeds; see below.

NATIVE STATUS Native



Nutrition Notes

Heart of palm, per 100 grams

115 calories, fat NA, 25.6 g carbohydrates, 2.7 g protein, 1.5 g fiber

Vitamin A	68 IU
Vitamin B1 (thiamine)	0.05 mg
Vitamin B2 (riboflavin)	0.18 mg
Vitamin B3 (niacin)	0.9 mg
Vitamin B6 (pyridoxine)	0.81 mg
Vitamin B9 (folic acid)	24 mcg
Vitamin C	8 mg
Vitamin E	0.5 mg

Calcium	18 mg
Copper	0.64 mg
Magnesium	10 mg
Phosphorus	140 mg
Potassium	1806 mg
Selenium	0.7 mcg
Sodium	18 mg
Zinc	3.37 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Tree to 60 feet tall, with long, spreading leaves to 9 feet, yellow-white flowers in many branched clusters, fragrant fruit ¼ inch wide. Ends of fronds are folded in half vertically.

TIME OF YEAR Evergreen; fruits summer to fall

RANGE Widespread in Florida; rarer in the rest of the South

ENVIRONMENT Brackish marshes, seacoast, woodlands, or hummocks and sandy soils

METHOD OF PREPARATION Raw or cooked for fruit, seeds, or, most likely, heart of palm

Green Deane's Notes

It is doubtful anyone has ever tested the fruit of the cabbage palmetto (*Sabal palmetto*, also called the cabbage palm) for nutrients. For one thing, the pulp is paint-thin and the seeds extremely hard. The pulp tastes like dates, though the aftertaste can be sweet or bitter—luck of the draw. It wouldn't be surprising if the fruit has the same nutritional profile as dates, but with less sugar. According to research, the fruit has significant antioxidant activity (the leaves have antioxidant capacity, too, but far less than the fruit).

So we'll have to satisfy ourselves just knowing the nutrition in heart of palm, the most commonly consumed part of the plant. The cabbage palmetto is also known as swamp cabbage to Florida Crackers, but it doesn't taste like cabbage. It's actually closer to artichoke and can be used in the same ways, although heart of palm is more nutritious generally than artichoke and contains less sodium.

The process of removing the heart from the palm begins with cutting or pulling away the outer leaf stems. These fronds, which are shaped like an upside-down Y, have woody bases called boots that wrap around the trunk (get your chunk of palm from a land clearer and it's already trimmed). The "boots" then have to be stripped from the trunk until the closely wrapped, cylindrical core is reached (done more easily with a chain saw than by hand). The core, or heart of palm, is creamy white, tender, and composed of leeklike layers (of undeveloped boots) with the texture of regular cabbage.

Heart of palm is edible raw and can be used as a salad ingredient. The most popular Florida Cracker way to consume swamp cabbage is to slice it thin and boil with meat seasoning until it has turned from white to yellow-brown or gray-brown.

Back to the cabbage palm's fruit: The *US Army Survival Manual* (2002) says the seeds can be ground up and used for flour. Make sure you have a heavy-duty metal grinder or the tough seeds will damage it. I've tried boiling them with no success—they remained as hard as rocks. Roasting reduces the ground-up kernels to an additive rather than a flour. They have a nutty if not coffee taste. Crude cakes can be made by mixing the pulp and kernels with a little water and baking them. It's roughage and roughing it, and you might end up with brown goop. *Sabal palmetto*'s young leaves are also edible raw or cooked.

Candyroot

Polygala nana

NOTABLE NUTRIENTS OR USES No nutritional data available; includes methyl salicylate (wintergreen oil)

SAFETY NOTES As the genus can cause vomiting when ingested, caution is recommended; it also contains an aspirin-like compound, so avoid it if you're on blood thinners or cannot take aspirin.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Small rosette of spatulate, succulent basal leaves about 1–2 inches long. Rabbit's-foot heads of flowers within the rosette a few inches longer than the leaves; lemon-yellow petals forming a tube in compact racemes.

TIME OF YEAR Blossoms in spring but can extend into summer

RANGE Largely found in the US Southeast

ENVIRONMENT Moist soil; usually in low, damp pockets of open pinelands

METHOD OF PREPARATION Roots chewed only or made into tea



Nutrition Notes

Roots, per 100 grams

30% carbohydrates, 2% protein, 0% fiber

Vitamin C	7 mg
Calcium	18 mg
Iron	20 mg
Phosphorus	63 mg

Green Deane's Notes

In a flower book I carried with me about 30 years ago on field trips with forager emeritus Dick Deuerling, I wrote of a *Polygala*: “Root chewed, can also make a tea.” I remember where we found it, a single plant growing in the middle of a woods road. I did not note that it was edible, just chewable.

Some species of *Polygala* in North America, including *P. nana*, have roots that smell like wintergreen or licorice. The smell comes from methyl salicylate. Chew the roots for flavor, but do not swallow them. Or soak them in hot water for a tea. So chewable and drinkable are more accurate descriptions of this plant than “edible.”

The plant hides well when not blossoming; in fact, it disappears. Its low profile might explain why little is published about the plant regarding edibility. *P. senega*, aka seneca snakeroot, is the only New World member of the genus written about to any extent. It has been used to treat not only snakebite—questionably—but colds, croup, coughs, pleurisy, rheumatism, heart problems, and convulsions. It can be an emetic, an expectorant, or a diuretic and applied externally on swellings. Common names of other *Polygala* species include Bachelor Buttons, drum heads, Gay Wings, Bird-on-Wings, Baby Toes, Baby's Feet, Baby Slippers, satin flower, Indian pink, Maywing, procession flower, and rogation flower, the latter two for making garlands to wear in religious ceremonies.

As with gorse (see [page 145](#)), the seeds of *Polygala* are spread by ants. No ants, no *Polygala*. That means the plants don't move too far too fast. Elaisomes are fleshy structures attached to the seeds that are rich in oil and proteins. Ants take the seeds into their nest, eat the elaisomes, then dump the seeds outside the nest. The seeds then find themselves in an open space, sitting in rich decaying material—not a bad start in life when you're a plant.

Canna

Canna spp.

NOTABLE NUTRIENTS OR USES Phosphorus, iron, calcium, vitamin C, protein

SAFETY NOTES No known safety issues

NATIVE STATUS Native to warm areas of the Americas but initially popularized in Asia



IDENTIFICATION *Canna flaccida*, rhizomes fleshy; leaves narrowly ovate to narrowly elliptic, 20–50 inches long, sheath and blade hairless, apex pointed; inflorescence racemes, five or fewer flowers each; blossoms vary greatly from large and showy to small and spindly; yellow flowers with short stems, narrowly oblong-elliptic sepals, strongly curved-back petals; seed capsules irregular in shape, seeds brown to black and nearly round. *C. edulis*, 6 feet high at harvest time; rhizome clump up to 2 feet long; alternate leaves a foot long and almost 6 inches wide; flowers have orange-red petals and three petal-like staminodia of different lengths, leading to three-cell seed capsules with round black seeds.

TIME OF YEAR Usually summer; roots should be harvested before the plant flowers.

RANGE North America, South America, and the Caribbean.

ENVIRONMENT Full sun, water around 6 inches deep; open marshes, lake margins, ponds, savannas, ditches, inundated pine flatwoods. Frost-sensitive but can grow in extreme northern climates because of the long days.

METHOD OF PREPARATION Roots raw, ground, boiled, baked, roasted; shoots and leaves steamed

Green Deane's Notes

A family I knew grew canna that had red blossoms with skinny petals. I thought the plants were from Asia because they looked so different in bloom than the Golden Canna (*Canna flaccida*) of the southern United States, which has large, fat blossoms of yellow. The canna genus encompasses two dozen or so species—though the count used to be around 100.

Canna is often called canna lily, but it's not a lily. It's in the order that includes ginger and bananas. How it got to be called "lily" is unknown; it can resemble an orchid and was once called the orchid-flowered canna. One

can also easily see the ginger relationship: Its leaves are large and green, sometimes brown or maroon, and blossom color usually favors the red/orange/yellow range.

The first named species was *Canna indica*, which means canna from India. But canna had been introduced in India and other regions of Asia. It took centuries for botanists to come to a general agreement that canna is native to the Americas.

The best-known canna for food is *Canna edulis*, also called achira. Its starch has been consumed for at least 4,500 years. *Canna edulis* roots may be boiled, baked, slow-roasted, or eaten raw. *Canna indica* roots are edible too, as are the rhizomes of *Canna coccinea*. While 8 months is optimal, canna roots can be harvested as young as 4 months but always before the plant blossoms; at 10 months, the roots become tough and not suitable for eating or starch production. Most of my experience has been with the showy *Canna flaccida*, also known as *Canna anahuacensis* and *Canna reevesii*, among other names. (The numerous botanical names arose because people thought they had found different species when, in reality, one species was just being carried from place to place.) *Canna flaccida* roots are usually ground and washed to let the starch settle. The water is then poured off and the starch dried. Young shoots and leaves of canna can be steamed/boiled like a green vegetable, and leaves can be used to wrap food for cooking.

Carolina Bristlemallow

Modiola caroliniana

NOTABLE NUTRIENTS OR USES No nutritional data available

SAFETY NOTES Might be toxic to cattle, sheep, and goats; may be diuretic, see note below.

NATIVE STATUS Probably naturalized



Green Deane's Itemized Plant Profile

IDENTIFICATION Prostrate, hairy stems, rooting at the nodes, which is also where flowering stems grow. Tuberous roots; long, leafy stipules. Leaves up to 3 inches long and 2 inches wide, delta- or kidney-shaped, shallowly to deeply toothed, with three to seven palmate lobes (themselves often pinnately lobed).

TIME OF YEAR Year-round where warmer, summer in temperate areas

RANGE Pennsylvania south to Florida and west to California and Oregon, in Massachusetts and Hawaii

ENVIRONMENT Orchards, vineyards, crop fields, gardens, lawn edges, urban sites, roadsides, dike roads, other unmanaged sites

METHOD OF PREPARATION Soak in water to drink

Green Deane's Notes

While I was scouting a federal preserve a decade ago for a suitable foraging-class site, an odd plant presented itself under an observation tower. Deep green and low, it kind of looked like plump parsley and was in a wet area but growing high and dry on a dirt road in partial sun. It was *Modiola caroliniana*, the only species in the monotypic genus *Modiola*, of the greater Malvaceae family.

The only way to consume Carolina Bristlemallow is as a refreshing drink: Soak a handful of leaves in a quart of water for 2 or more hours. *Warning:* It could have a diuretic effect (Indigenous folks used it to treat edema).

Where the plant originated is not certain; most experts think South America. Daniel F. Austin, PhD, says in his huge tome *Florida Ethnobotany* that it was used by Indigenous people and settlers, as reported by G.M. Hocking, as a gargle for sore throats and tonsillitis; as an emollient and sedative; and to treat diphtheria, edema, and menstrual discomfort. *Modiola caroliniana* has been suspected in the poisoning and paralysis of livestock, possibly due to nitrate toxicosis, which has also occurred with other Malvaceae species.

Carpetweed

Mollugo spp.

NOTABLE NUTRIENTS OR USES No nutritional data available

SAFETY NOTES See preparation notes below.

NATIVE STATUS Native and introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION *Mollugo verticillate*, late-germinating, many-branched annual forming circular patches 1–2 feet in diameter (often smaller, sometimes larger). Leaves sessile and typically shiny, in whorls of three to eight per node. Small flowers, each with five white sepals, in clusters of two to five on long stalks. Red-to-orange seeds in an egg-shaped capsule. Carpetweed is smooth to the touch and grows low, like a carpet—whereas *Galium* (aka bedstraw or woodruff, for which you might mistake it) is rough and grows up into a tangled mass.

TIME OF YEAR Warm months in northern climes, nearly year-round in warm climes; flowers summer to early fall

RANGE The Americas and Asia

ENVIRONMENT Fields, gardens, roadsides; moist or dry soil, sand

METHOD OF PREPARATION Boiling

Green Deane's Notes

When it comes to carpetweed, you need to know only two things: It grows nearly everywhere, and all parts aboveground are edible. Boil before consuming. Leaves are the preferable parts, especially when they're young and tender—what's known as the meristem stage.

In India, where they have to feed a billion people, carpetweed (known there as Papait) is used in salads and often cooked with mung beans. It is believed to be high in iron and a good source of calcium, and there is magnesium in its chlorophyll molecule.

Although it's been in North America perhaps 3,000 years, carpetweed is not mentioned in Daniel Moerman's *Native American Food Plants*. It has ... carpeted ... North America and is working on China. Yet that's apparently not enough to get into most foraging guides. Consuming carpetweed may increase your levels of nitric oxide, which, in theory at least, should lower blood pressure—and perhaps raise other things.

Cattail

Typha spp.

NOTABLE NUTRIENTS OR USES Manganese, vitamin B6, vitamin K, magnesium, potassium

SAFETY NOTES Be sure to harvest from clean locations because they absorb unhealthy stuff easily. Also watch out for beetle grubs that live on cattails and other aquatic plants. See note below about potential lookalikes when plants are young.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Cattails grow to 9 feet; leaves are stiff, spongy inside, rounded on back, sheathed together at base to appear “flattened” though it’s oval; the cigar-looking “blossom” is densely packed with tiny flowers, male flowers in top cluster, female flowers in bottom cluster. Roots (actually rhizomes) grow horizontally. (When you’re reaching down from a canoe,

pull at horizontal masses, not deep.) Younger plants can be mistaken for three toxic species (sweet flag, *Acorus calamus*, and two irises—*Iris versicolor* and *Iris pseudacorus*), so look for last year’s growth to confirm they’re cattails. They don’t smell much, so if you have an aromatic or strong-flavored plant, it’s not cattail.

TIME OF YEAR Spikes, pollen, and flowers in spring; bottoms of stalks and roots best in spring and fall

RANGE Every state except for Hawaii

ENVIRONMENT Rivers, ponds, ditches, lakes, close to shore or farther out

METHOD OF PREPARATION For starch or flour, boiled, certain parts raw

Nutrition Notes

Rhizomes, per 100 grams

25 calories, fat NA, 20.3 g carbohydrates, 4.7 g protein, fiber NA

Vitamin A	11 IU
Vitamin B6 (pyridoxine)	0.1 mg
Vitamin K	6.4 mcg
Calcium	54 mg
Iron	0.9 mg
Magnesium	63 mg
Manganese	0.8 mg
Phosphorus	45 mg
Potassium	309 mg
Sodium	109 mg
Betaine	1.1 mg
Choline	23.7 mg

Nutrition Notes

Shoots, per 100 grams

68 calories, 0.7 g fat, carbohydrates NA, 1.7 g protein, 5.7 g fiber

Vitamin B2 (riboflavin)	0.13 mg
Calcium	133 mg

Magnesium	31 mg
Phosphorus	11 mg
Potassium	367 mg
Sodium	188 mg

Green Deane's Notes

Before World War II ended, plans had been formulated to start feeding American soldiers with cattail starch. No green plant produces more edible starch per cultivated acre than the cattail—not potatoes, not rice, not cassava, taro, or yams. One acre of cattails can produce 6,475 pounds of flour per year on average.

Dick Deuerling, the wild-food fellow in central Florida, who taught Boy Scouts foraging skills, once told me a Boy Scout motto was “You name it and we’ll make it from cattails.” The late forager extraordinaire Euell Gibbons called cattails the supermarket of the swamp. The protein-rich pollen can be used like flour. You can eat the young tips of the cobs and the white bottoms of the stalks. Cattails are mild-tasting. Pull the young center blade up and out; where it breaks from the stalk, there’s usually a bite or two. Spurs and spaghetti-like rootlets off the main rhizomes are also edible—I like their convenience as a trailside nibble, or canoe-side nibble, as it were. I think the best parts, though, are the new shoots off the main rhizome, which are like sharp bamboo shoots. They look like an alligator’s tooth starting out, then a pointed hook 3 or 4 inches long.

The rhizomes themselves need some processing. You have to clean them, then crush them in fresh water and let them sit until starch settles on the bottom of the bowl. (Crushing releases the starch.) Pour out the water, refill the bowl, let settle again; pour off, refill, settle again, etc. It may take several drain-and-settle sessions. Once you have just the starch, it’s excellent for use in cooking as you would use any flour.

If you're going to eat the starch rather than turn it into flour, my preferred way is to roast the rhizomes until the spongy outer cores are completely black, split them open, and chew the starch off the fiber. If you have fire and a pond, you have a nutritious meal—no pots or pans needed. Alternatively, the roots can be boiled like potatoes, then the starch chewed out (spitting away the fibers).

To consume other parts of the cattail, you can nibble on the stalks; boil the flowers, rhizome stems, or shoots; and roast the cores of the rhizomes until dry and use as a coffee substitute. Native Americans ate cattails and used their end-of-season fluff for mattress stuffing and insulation, to make diapers and feminine hygiene products, and as tinder. Dry, old stalks can be used for making fires too. When I was a kid, we used the dried spikes as torches while ice-skating outdoors.

The proliferation of cattails in a body of water is an important part of the process of open fresh water converting into marsh, then dry land. They were first mentioned in writing in the United States in the 1830s, and at that time were found only along the Atlantic Seaboard and the Gulf of Mexico, excluding Texas. They weren't even reported in northern states until after World War I. Three species are common in North America today: *Typha latifolia* (Broadleaf Cattail), *Typha angustifolia* (Narrowleaf Cattail), and *Typha domingensis* (Southern Cattail). Besides the difference in the width of their leaves, *T. latifolia* likes shallower water, *T. angustifolia* deeper water. Still, it is not unusual to find them living side by side and even crossbreeding. The native cattail *Typha gracilis* seems to have all but disappeared, hybridizing with the European versions.

Che

Cudrania tricuspidata

NOTABLE NUTRIENTS OR USES Vitamin C, fiber, potassium, phosphorus, calcium

SAFETY NOTES No known safety issues, but watch out for thorns.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Often a broad, spreading bush or small tree, up to 25 feet high; deciduous; immature wood thorny; evergreen in warmer areas, leaves turn red in fall in cooler places. Leaves alternate, pale yellowish-green, trilobate, with central lobe sometimes twice as long as the lateral lobes, frequently unlobed. Flowers male and female on different plants, green, pea-size. Aggregate fruit ripens to red or maroon, rich red flesh, three to six edible seeds per fruit.

TIME OF YEAR Flowers in late spring or early summer; fruit in early fall in cooler areas, later where warmer

RANGE Nationwide except New England

ENVIRONMENT Likes a sunny, warm location with rich, well-drained soil but can grow in rocky dirt and tolerate temperatures down to −20°F.

METHOD OF PREPARATION Fresh or as an ingredient

Nutrition Notes	
Fruit, per 100 grams, dried	
414 calories, 14 g fat, 14.5% carbohydrates, 26.6% sugar, 2.6% protein, 30.3% fiber, 2.2% lipids	
Vitamin C	149.2 mg
Calcium	171.4 mg
Iron	5.8% (mg percentage)
Magnesium	63.8% (mg percentage)
Phosphorus	180.9 mg
Potassium	1033 mg
Sodium	20.8% (mg percentage)

Green Deane’s Notes

The Che is not the tree it used to be. At one time there were just he and she Che trees, both cultivated and wild. A few decades ago, along came a self-fertilizing seedless Che. Then the Che was grafted onto a close relative, the Osage Orange. The seedless Che is a small tree. The natural species is shrubby and can produce many suckers. Grafting created a superior single-trunk tree. Both male and female trees can fruit, she more than he, while the grafted seedless variety fruits the most.

The Che bears clusters of red, juicy fruits that resemble mulberries but are rounder and about the size of Ping-Pong balls. The flavor is a cross between a mulberry and a fig, which is not remarkable as the Che is related to both.

Trees mature early and can produce up to 400 pounds each of chewy fruit. Let the fruit stay on the tree until soft and dead ripe. Ripening is continuous

for about a month. Consume Che fruit as you do mulberries or figs. It has a good shelf life, and it stains like mulberries.

While the Che has been promoted outside of China as the up-and-coming fruit tree for decades, in China, where it is native, its reputation varies from valuable to intolerable. This might be because of erratic thorns. Silk made from the leaves is reported to make high-quality lute strings of pure tone. The Che is also a favored tree for bonsai.

Checkerberry

Gaultheria procumbens

NOTABLE NUTRIENTS OR USES Methyl salicylate, calcium, phosphorus, potassium, magnesium

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen alternate leaves clustered at tips of plant, oval to elliptical, 1–2 inches long, shiny dark green above, paler below, often with black dots, tiny teeth, stiff with a wintergreen odor when crushed. Small white flowers, urn-shaped, hanging from short stems in mid- to late summer. Round red fruit 0.25–0.5 inch through, hanging beneath leaves, mild wintergreen taste, begin to ripen in late summer, can last through winter.

TIME OF YEAR Berries fall or spring, under the snow if you can find them

RANGE Eastern North America down to northern Georgia

ENVIRONMENT Sandy soil in northern fields and cool damp woodlands

METHOD OF PREPARATION Eat the berries fresh, make tea from the leaves

Nutrition Notes

Shoots, per 100 grams

Shoots: 0.5 g protein; Leaves: 2.7 g protein, 7.7 g fiber

Vitamin A	7 RE (leaves)
Calcium	96 mg (shoots), 549 mg (leaves)
Copper	0.1 mg
Iron	1.3 mg
Magnesium	46 mg
Manganese	7 mg
Phosphorus	9 mg (shoots), 33 mg (leaves)
Potassium	60 mg
Zinc	0.3 mg
Chloride	3.8 mg

Green Deane's Notes

When I was a kid, I marveled how checkerberries managed to be the first plant with ripe fruit when the spring snow melted. They grew on a low hill—I can remember exactly which side—about a third of a mile from where I lived in Pownal, Maine. In large fields of dead brown grass, the verdant little woody plant and its red berries were easy to spot. Every spring I was there picking them.

And then there was the aroma of the leaves. If I couldn't find berries (perhaps the birds had the same idea as I did), I'd chew on the leaves, lightly wintergreen with a slightly bitter aftertaste. The flavor comes from methyl salicylate (see entry on Candyroot, [page 87](#)).

There was probably just one checkerberry on that Maine hill because it's their habit to send roots and pop up everywhere, giving the impression of a

patch when it is but a single plant. And only years later did I learn checkerberries actually fruit in the fall and pass the winter with the ripe fruit on them.

At one time the checkerberry was very popular for tea, hence the alternate common name teaberry. You can make a mild tea from its leaves and branches through normal drying and seeping in hot water, but this is a better way: Ferment the leaves by putting them in warm water and wait a few days until they begin to bubble. (Wild yeasts will take care of the rest.) Then make tea either with wet leaves from the fermentation vessel or after they've dried. It's not only an excellent-tasting tea but somewhat medicinal because of the methyl salicylate. Think of it as a pleasant aspirin and breath freshener. Given the choice of an aspirin a day or a cup of checkerberry tea, just guess what I'd take.

Chickweed

Stellaria media

NOTABLE NUTRIENTS OR USES Potassium, vitamin A, vitamin K, vitamin C, sodium

SAFETY NOTES Holds nitrates; beware if allergic to daisies. See note about lookalike species below.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Annual herb with slender, smooth stems to about a foot long, one row of tiny hairs on one side of the stem, switching to other side at each pair of opposite, oval, pointed leaves. Old leaves have stalks, young leaves do not. Small, white flowers with five petals so deeply notched they look like 10 petals. No milky sap

TIME OF YEAR During cool weather of spring in northern climes, midwinter in warmer areas

RANGE North America, Asia, Europe, and Australia

ENVIRONMENT Likes moist soil and/or shady areas

METHOD OF PREPARATION Raw in salad, boiled, or fried

Nutrition Notes	
Fresh, per 100 grams	
29.51 calories, 1 g fat, 5.27 g carbohydrates, 1.45 g protein, 3.69 g fiber	
Vitamin A	2315.32 IU
Vitamin C	11–49 mg
Calcium	66.92 mg (fresh), 4.2 mg (dry)
Copper	1.50 mg (dry)
Iron	1.56 mg (fresh), 13.42 mg (dry)
Magnesium	7.40 mg (dry)
Manganese	4.50 mg (dry)
Potassium	446.24 mg (fresh), 6376.16 mg (dry)
Selenium	0.74 mg (dry)
Sodium	45.83 mg (fresh), 72.91 mg (dry)
Zinc	0.90 mg (dry)

Green Deane’s Notes

If you want to find chickweed, consult your thermometer. Chickweed is a seed factory, able to produce more than 30,000 seeds per plant. And those seeds tend to germinate between 53°F and 68°F. Up north, that’s usually in the springtime, after the snow has gone; way down south, it’s Christmas to around Valentine’s Day.

Chickweed is also a backyard barometer: Its leaves fold up when it’s going to rain. They also fold up at night. Chickweed is not an early riser—the blossoms open late in the morning. It’s called chickweed because chickens love it.

Raw chickweed tastes like raw corn silk. It tastes better cooked, similar to spinach but with a different texture. Chickweed can be stringy, so it is often

chopped before boiling or sautéing. It can be added to soups or stews, but only in the last 5 minutes to prevent overcooking. The chickweed's stems, leaves, flowers, and seeds are all edible. The mouse-ear chickweed (*Cerastium fontanu*) should only be eaten cooked.

There are some lookalikes to the main chickweed species, *Stellaria media*, but three things separate it from those poisonous pretenders (Euphorbias, for example). Chickweed does not have milky sap, and it has one line of hair on its stem that changes sides at each pair of leaves. The third difference is if you bend or crease the chickweed's stem, rotate each end counter with the other, and gently pull, the outer part of the stem will separate, but the elastic inner part will not, and you will have a stretched inner part between the two stem ends. If you have chickweed that doesn't quite fit the description but has a stretchy core, you might have *Drymaria coradata*, an edible chickweed cousin (see entry for West Indian Chickweed, [page 305](#)).

Chicory

Cichorium intybus

NOTABLE NUTRIENTS OR USES Potassium, calcium, phosphorus, magnesium, folic acid, lutein and zeaxanthin

SAFETY NOTES No known safety issues

NATIVE STATUS Naturalized



Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial herb 5 feet tall tops; large, deep taproot; erect stems, often branching; leaves alternate, lance-shaped, to 12 inches long, 3 inches wide, toothed and lobed along the edge; flowering heads on upper parts of stems in the junction of smaller leaves, usually bright blue, sometimes pink or white

TIME OF YEAR Leaves as soon as possible in the spring, root fall through spring, flowers anytime

RANGE All of North America reportedly

ENVIRONMENT Likes chalky soil but not fussy; can be found along roads, fields, vacant lots, disturbed ground, gardens

METHOD OF PREPARATION Raw, boiled, roasted for coffee

Nutrition Notes

Per 100 grams

23 calories, 0.3 g fat, 4.7 g carbohydrates 1.7 g, protein, 4 g fiber

Vitamin A	5717 IU (green)
Vitamin B9 (folic acid)	110 mcg (green), 23 mcg (roots)
Vitamin C	24 mg (green), 5 mg (roots)
Vitamin E	2.26 mg (green)
Vitamin K	297 mcg (green)
Calcium	100 mg (green), 41 mg (roots)
Copper	0.002 mg
Magnesium	30 mg (green), 22 mg (roots)
Phosphorus	47 mg (green), 61 mg (roots)
Potassium	420 mg (green), 290 mg (roots)
Lutein and zeaxanthin	10.3 mg

Green Deane's Notes

In all my decades of foraging, chicory is one of only two plants that looked exactly as it should the first time I found it. When I saw it in a park in Alexandria, Virginia, in 1990, it was instantly recognizable, growing next to a little ditch. Some of the flowers went home with me for a salad. I have since raised its bitter leafy cousins, radicchio and Belgian endive.

Coffee is perhaps the best-known use of chicory. While some call it a coffee extender or substitute, it is more accurate to say that blending chicory with coffee changes the overall flavor profile. If they made chicory coffee decaffeinated, I would drink more of it.

Chicory has other uses besides leading coffee astray. The young leaves and the blossoms can be tossed into salads. The flower buds can be pickled, crown bases boiled 5 minutes before eating, and the roots boiled (though it

may take several changes of water). Blanched spring growth, raised in the dark, is not bitter.

In my father's native Greece, chicory is a common wild green and picked often. Greeks still forage for greens regularly—it's as much something they do as American's don't do. I have cousins who would be offended by the idea of buying greens. And while their patches of land might be small and scattered, they tend to them religiously.

Chinese Tallow Tree

Triadica sebifera

NOTABLE NUTRIENTS OR USES No nutritional data available; fat

SAFETY NOTES Bark and oil inside seeds contain a toxic alkaloid. The tree belongs to a family that has a lot of poisonous plants. See notes below.

NATIVE STATUS Naturalized



Green Deane's Itemized Plant Profile

IDENTIFICATION Quick-growing deciduous tree typically 24–35 feet tall but up to 65 feet. Leaves alternate, simple, usually oval or round but may be diamond-shaped. Trunks can be gnarled with fissured bark, which thickens as the tree grows. Tiny flowers in terminal spikes 3–8 inches. Fruits are capsules containing three wax-coated seeds.

TIME OF YEAR Fruit, August to November

RANGE Texas and the Southeast

ENVIRONMENT Nearly any, but roadsides, lowlands, trashy sites, borders are common

METHOD OF PREPARATION Extract wax from seed coating for cooking oil

Green Deane's Notes

If you're ever on your own needing to find food, fat becomes a necessity, and the Chinese tallow tree might help.

There are many stories in survival literature about foragers having access to food, but starving nonetheless because of little to no access to fat. "Rabbit starvation" is one name for it and comes from anecdotes about hunters having access to rabbits, but still starving to death. Let's cut through the dietary posturing: Rabbit meat is about 8.3% fat whereas beef is about 30%, but that isn't the whole story. Rabbit brains are almost completely fat and were completely consumed by ancient peoples (as were squirrel brains). If your rabbit bone marrow is also consumed, almost no one would define rabbits as "low-fat." It's simply customary for us to eat the low-fat parts and avoid the high-fat parts. Besides, protein is more useful to the body as a construction material or for repairing damage (say to muscles) than as an energy source. That's where fat—and the Chinese tallow tree—comes in.

The waxy white coating of its seeds is essentially a triglyceride, a highly saturated fat. Whether that coating, the aril, is truly edible has been the subject of a lot of debate, and understandably so.

You should absolutely avoid the seed kernel oil, which is not only inedible but a poisonous alkaloid. The difficult part is removing the white fat from the seed without getting any seed oil in it. Fortunately, the hard seed coating keeps the two oils apart. The fatty wax from the aril can be scraped or melted off and made into edible oil, according to experts. Research has shown it contains substances with strong antiviral and anticarcinogenic properties that can also ease high blood pressure.

Native to China, Chinese tallow was introduced in the US by Benjamin Franklin. In a letter dated October 7, 1772, Franklin wrote to Noble Wimberly Jones, a horticultural enthusiast and gentleman farmer in Darien, Georgia: “I send also a few Seeds of the Chinese Tallow Tree, which will I believe grow and thrive with you. ’Tis a most useful Plant.” In 1826 botanist Stephen Elliot wrote that the tree “bears fruit in great abundance, but though they contain much oil, no use is yet made of them.” Today, the seed oil has found use as a commercial drying agent in paints and varnishes.

Chinquapin

Castanea pumila

NOTABLE NUTRIENTS OR USES Carbohydrates, protein, potassium, lipids (fats)

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Nutrition Notes: *C. ozarkensis*

Per 100 grams

443 calories, 18 g fat, 57 g carbohydrates, 13g protein, 6 g fiber

Potassium

77 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Small tree or large shrub 6–15 feet tall. Twigs densely hairy when young, becoming shiny brown with reddish, hairy buds. Alternate leaves, short-stemmed, prominently veined, oblong with fine pointed teeth

or bristles, hairy on the lower surface. Fruit a spiny burr with a single nut; burr opens like a clamshell.

TIME OF YEAR Early September, with some leeway for location

RANGE New York south to Florida and west to Texas

ENVIRONMENT Prefers mixed hardwood forests with pines and oaks on ridges and slopes, under 4,450 feet. Heat tolerant but intolerant of salt spray or shade. Dislikes limestone or sand dunes

METHOD OF PREPARATION Raw or roasted

Green Deane's Notes

A member of the beech family, the chinquapin (alternately spelled chinkapin) has been called the most ignored and undervalued native North American nut tree. It has a sweet nut, which is sometimes used as a coffee and chocolate substitute. Shell and roast them, or eat them raw. Other parts of the tree have been used for tinder, fence posts, and railroad ties.

The chinquapin managed to survive the early-20th-century blight that nearly wiped out its relative the American chestnut (*Castanea dentata*). Its nut is about half of the size of a chestnut. *Castanea pumila* is the American or Allegheny Chinquapin, also called the dwarf chestnut. Other species include *C. ozarkensis*, the Ozark Chinquapin, and *Chrysolepis chrysophylla*, the golden or giant chinquapin.

Chocolate Vine

Akebia quinata

NOTABLE NUTRIENTS OR USES Vitamin C, potassium, magnesium, calcium, carbohydrates

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Deciduous twining vine, to 40 feet long, green when young, turning brown with age, lenticels noticeable. Leaves palmately compound with up to five 1.5- to 3-inch-long oval leaflets, evergreen or semievergreen depending on climate. Flowers monoecious and fragrant (may resemble chocolate). Dangling flowers produce fruit that resembles little eggplants. Seedpods purplish with white pulp, black seeds

TIME OF YEAR Flowers in midspring, fruit September and October

RANGE Asia, Japan, the Koreas, eastern North America, Europe, and cultivated elsewhere

ENVIRONMENT Grows easily in most soils, does best in well-drained sandy loam with regular moisture and full sun. Can form dense mats as an understory species and may climb and kill small trees and shrubs.

METHOD OF PREPARATION Fruit raw or blended as a drink, skin and pods fried, young shoots raw or pickled

Nutrition Notes

Fruit pulp, per 100 grams

32 calories, 4.03% fat, 50% carbohydrates, 2.45% protein, 3.86% fiber

Vitamin C	930 mg
Calcium	~48 mg
Copper	~0.7 mg
Magnesium	100–151 mg
Manganese	1.6–2.1 mg
Potassium	321–496 mg
Sodium	~0.6 mg
Zinc	~2.3 mg

Green Deane's Notes

Any plant with “chocolate” in the name is sure to get attention. And when it’s also considered an invasive species, then even more so. The flowers of *Akebia quinata* smell lightly of chocolate, though some people think the aroma is more like lilac, vanilla, or allspice—noses don’t agree. It’s also called the chocolate vine because the blossoms may be dusky in color. There are five cultivated varieties.

Most references are quick to say the chocolate vine produces an edible fruit but doesn’t fruit often and isn’t interesting, as if to discredit any possible benefit this “invasive” might have. However, there is more to it. The mild, viscous pulp of the soft fruit can be eaten raw with lemon juice or pureed

for drinking. It has a slight coconut-milk flavor. The fruit is also used to make wine, and its bitter skin can be fried and eaten. Other parts of the chocolate vine to be consumed are young shoots in salads or pickled, the leaves as a tea substitute, and the empty fruit pod stuffed and deep-fried. The seeds are edible but on the bitter side, and many folks find them unappealing. The seed oil has been used to make soap and as a vegetable oil. Young vines are used to make baskets. Medicinally, sliced inner vine is used to make a diuretic.

The chocolate vine was brought out of China in 1845 by the most famous plant smuggler and secret agent of his day, a Scotsman called Robert Fortune. Once Fortune got the chocolate vine to England, it came to the United States. Call that a training theft before the big heist because Fortune then went back for all the tea in China, literally. He disguised himself as a Chinese peasant—though he did not speak Chinese and knew nothing of botany—and smuggled tea plants and industry knowledge out of China to India, then under British rule. For the next 150 years India led the world in tea production. Only recently has China become the main producer of tea again. Fortune is why the British drink tea. (See entry for *forsythia*.) A relative, *Akebia trifoliata*, is also known as a chocolate vine, as well as the Mitsuba or Three-Leaf Akebia.

Chufa

Cyperus esculentus

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, magnesium, calcium, fat; insect repellent

SAFETY NOTES See preparation notes below.

NATIVE STATUS Introduced



IDENTIFICATION Annual sedge to 3 feet tall, solitary triangular stem with slender leaves 1–3 inches wide, flowers a cluster of flat oval seeds surrounded by four hanging leaf bracts at 90 degrees. Tough, fibrous, may be mistaken for a grass. It can be distinguished from other New World nutsedges by linear brown spikelets (flower on top) with overlapping scales.

TIME OF YEAR August to November

RANGE The southern US

ENVIRONMENT Old fields, cultivated ground, upland prairies, pond margins, stream edges, pastures, roadsides, railroads

METHOD OF PREPARATION Tubers raw, boiled, roasted

Nutrition Notes	
Per 100 grams	
452 calories, 17% fat, 17.82% carbohydrates, 8.51% protein, 13.1% fiber	
Vitamin A	0.87 mg
Vitamin C	30 mg
Calcium	43.36 mg
Copper	0.54 mg
Iron	2.82 mg
Magnesium	118.14 mg
Phosphorus	158.86 mg
Potassium	267.18 mg
Sodium	17.02 mg
Zinc	1.39 mg

Green Deane’s Notes

Chufa, aka Yellow Nutsedge, is classified as a noxious weed in many places and difficult to control. Each plant can produce more than 2,000 seeds and 7,000 tubers in a year. That’s a lot of food. And remember sedges have edges and these sedges have three sides, like a triangle. The tubers, also

called tigernuts, reach the size of hazelnuts and have a similar taste. They are excellent right out of the ground or boiled or roasted.

The tubers of *Cyperus rotundus*, a closely related species known as purple nutsedge or nut grass, are also edible raw. They bear a Vick's VapoRub-like aroma, which diminishes when they are dried, though before drying they can be used as an insect repellent—a case of wear outside this week and eat inside next week.

“Yellow” and “purple” in the common names refer to the coloring of the flowers, which are actually clusters of seeds. Like all sedge seeds around the world, they are edible. To consume chufa tubers, you have to first remove their husks, which can be loosened by rubbing. The nutlets may be hard; soaking them in water can soften them a bit.

Tigernuts are high in starch, as one might expect for tubers, but compared with such other tubers as sweet potatoes, yams, and cassava, they have more fat content—about on par with soybeans. In addition to being human food, the tubers when boiled make good carp bait.

Cinnamon and Camphor

Cinnamomum verum, Cinnamomum camphora

NOTABLE NUTRIENTS OR USES Calcium, potassium, phosphorus, magnesium, iron

SAFETY NOTES Camphor should be avoided by pregnant women and children and consumed minimally by others because of potentially dangerous compounds in it. See below regarding cinnamon's anticoagulant properties.

NATIVE STATUS Introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION *Cinnamomum camphora*, tree to 70 feet tall with reddish-brown bark and trunk to 6 feet diameter. Leaves alternate, evergreen (pink when young), simple, oval to elliptical, to 5 inches long but usually shorter, edges can be somewhat wavy, glossy dark green above, pale below, with three prominent veins, camphor odor when crushed. Fruit are round, fleshy drupes that appear in autumn, dark blue to black, inedible. *Cinnamomum verum* looks similar but more graceful: Leaves are longer, thinner, have slightly spicy aroma when crushed; fruit oblong. If you know where one has been planted, younger trees can usually be found nearby.

TIME OF YEAR Young leaves anytime; shoots when sprouting, usually but not exclusively spring

RANGE Cinnamon, native to Asia, but introduced to Florida. Camphor, introduced; now found in California, Texas, and southeastern United States

ENVIRONMENT Open spaces with plenty of sun and adequate watering. Does not like its feet wet.

METHOD OF PREPARATION Young leaves and shoots boiled; shoots made into tea; leaves, bark, twigs for spice



Nutrition Notes	
Ground cinnamon bark, per teaspoon	
6.4 calories, g fat, 2.1 g carbohydrates, 4g protein, 1.4 g fiber	
Vitamin A	39 IU
Calcium	26.1 mg
Iron	0.21 mg
Magnesium	1.56 mg
Phosphorus	1.66 mg
Potassium	11.2 mg

Green Deane’s Notes

Cinnamon and camphor are in the same genus, *Cinnamomum*, and both have poor reputations in certain places. In Asia, cinnamon is considered a “trash tree;” in North America, camphor is. Trees get that label when they grow huge and fast. Camphor trees are everywhere, and they produce hundreds of berries and seedlings every year. This upsets controlled-garden folks who don’t like their planned palette colored by a rambunctious

upstart. Some people do like the camphor—whether it's pal or pest is a matter of attitude and perspective.

Botanically, cinnamon is *Cinnamomum verum*, also called *Cinnamomum zeylanicum*. Another common name is Ceylon cinnamon. But the cinnamon you buy at the grocery store probably comes from *Cinnamomum aromaticum*, aka *Cinnamomum cassia*, or Chinese cinnamon, as Ceylon cinnamon is significantly more expensive. Cinnamon sticks, or quills, are really rolls of cambium (bark), and the powdered spice is made from the bark as well. Chinese cinnamon quills are dark brown or reddish brown and have a rough texture. Ceylon cinnamon quills are tan-brown and have a soft texture.

Cinnamaldehyde is the essential oil that gives cinnamon its flavor and aroma. Ceylon cinnamon has less of it than Chinese cinnamon, so it has a less intense flavor. Chinese cinnamon also is notably higher in coumarin, a compound that can reduce blood clotting and amplify the effects of blood-thinning medications like Coumadin.

The key essential oil in camphor is safrole, which is also found in sassafras, once the main flavoring in root beer. Safrole has been banned from commercial distribution because it may be carcinogenic and it is used in manufacturing the illegal drug ecstasy. While camphor is not well known as a spice today, it was common in Europe before the Renaissance and its leaves and twigs are used in Szechuan, China, to make a popular smoked duck dish. Wood from the camphor tree is a favorite for furniture making because it naturally drives away insects. Camphor is an ingredient in Swedish bitters, an herbal digestive, and in the pain-relieving ointment Tiger Balm.

Internal use and consumption of camphor should generally be avoided because all its parts contain chemicals that can affect breathing or cause convulsions. Young, pink leaves and shoots can be boiled and eaten. The

roots of the young shoots are used to make a tea with the aroma of root beer. Older leaves can be ground for a spice, but go easy: They are toxic in large doses. Camphor twigs, leaves, and wood in the fire can add a smoky flavor to food.

Citron Melon

Citrullus lanatus var. *citroides*

NOTABLE NUTRIENTS OR USES Pectin, phosphorus, calcium, sodium, magnesium, vitamin C

SAFETY NOTES No known safety issues, but avoid bitter melons

NATIVE STATUS Introduced



Nutrition Notes

Seeds, per 100 grams

calories NA, fat NA, carbohydrates NA, protein NA, fiber NA

Vitamin A	52.13 mg
Vitamin B1 (thiamine)	1.23 mg
Vitamin B2 (riboflavin)	2.71 mg
Vitamin B3 (niacin)	4.25 mg
Vitamin B6 (pyridoxine)	5.34 mg
Vitamin C	8.46 mg
Calcium	29.15 mg
Copper	0.45 mg
Iron	1.29 mg

Magnesium	1.48 mg
Manganese	1.42 mg
Phosphorus	135.24 mg
Potassium	1.37 mg
Sodium	12.65 mg
Zinc	1.29 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Looks like a round watermelon with jagged stripes, up to soccer ball size. Young leaves palmate, older leaves deeply lobed, rough texture, visible white veins; tendrils to the side of the leaves; solitary flowers with large yellow petals.

TIME OF YEAR Harvest fruit when the vine starts to die back.

RANGE the southern US, Africa

ENVIRONMENT Old groves, unattended margins of groves, pastures, fields

METHOD OF PREPARATION Depending on bitterness, rind, flesh, pulp, leaves raw, cooked, preserved

Green Deane's Notes

Most people view the Citron Melon as inedible when raw—too bitter. But the small watermelons you see in citrus groves are full of pectin, so if not bitter, they can be cooked for jam or glaze. Non-bitter melons' tough white pulp can be consumed raw—pounded and made edible or juiced for drinking—but it's preferable cooked.

Edibility of the Citron Melon, which people may call the “pie melon,” varies greatly because it hybridizes with cultivated watermelons. It always smells like watermelon. Round melons tend to be wild; an oblong shape indicates some cultivated genes. I have found some Citron Melons quite

edible in the field, with no cooking needed, but often they *are* too bitter to eat. Generally, the smaller a melon is, the more likely it is to be bitter.

For preserving, you would use the rind and flesh. To cook nonbitter pulp, boil it until tender. Flowers (with pistils removed) and young leaves, if not bitter, can be boiled like greens. The seeds are edible as well: They can be dried or roasted or ground into a paste and made into a meal with many applications. Depending on the individual melon's heritage, its seeds are green with a pitted surface, glossy with tapered ends, or flat and oval.

Citrus groves where you find citron melons tend to be abandoned or not cared for. The species is host to a bug that can damage citrus, so if a grove is well-kept, those maintaining it would do their best to get rid of the opportunist melon. From a melon's point of view, a grove is a great place to be: There's food, water, sun, and other weeds are kept out. Where I see Citron Melons a lot is in cattle and horse pastures. That tells me either the melons there are too bitter for the livestock to eat or the animals have enough other food.

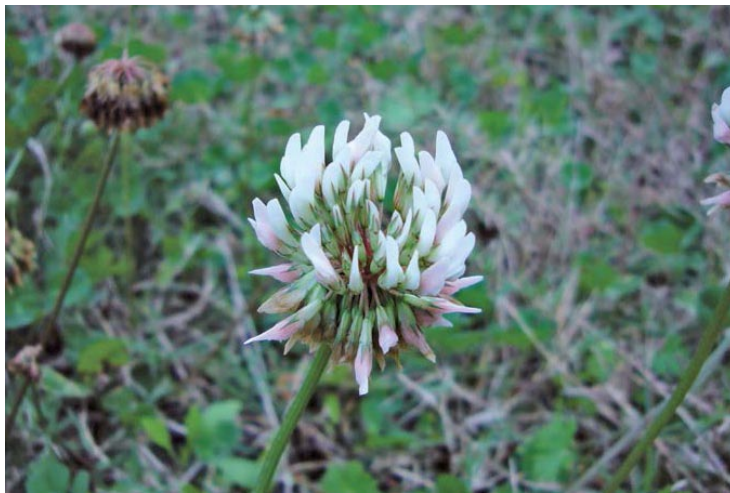
Clover

Trifolium spp.

NOTABLE NUTRIENTS OR USES Protein, fiber, calcium, vitamin C, iron

SAFETY NOTES A lot of people are allergic to clover, so try small amounts at first. Red clover (*Trifolium pratense*) contains chemicals that act like estrogen, so women who are pregnant or nursing should consume with caution. Exercise caution if heavy iron consumption could be a health problem. Do not cook, dry, or eat clover that isn't completely fresh (see more below), and don't mistake clover for sweet clover (*Melilotus spp.*), which can be dangerous. Also, one study found toxic cyanogenic glycosides in clover under certain growing conditions, so use caution, generally.

NATIVE STATUS Native to Eurasia but naturalized all over the world



Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen perennial growing to a half foot tall, famous for its three leaves; blossoms can be white, pink, or red depending on the species

TIME OF YEAR Usually summer and fall

RANGE All over the US and Canada

ENVIRONMENT Likes sunny areas and moist soils; usually found in lawns

METHOD OF PREPARATION Leaves raw or cooked as a potherb, the younger the better. Dried seedpods and flowers ground into powder and used as a flour, young flowers in salads. Cooked root edible. Dried flowers also used to make herbal tea.

Nutrition Notes: *T. repens*

Per 100 grams

31 calories, 0.4 g fat, 3.54 g carbohydrates, 3.54 g (2.5 g^{*}) protein, 2.7 g fiber

Vitamin C (as ascorbic acid)	10.6 mg
Calcium	33 mg (150 mg [*])
Copper	0.2 mg [*]
Iron	0.85 mg (39.3 mg [*])
Magnesium	29 mg [*]
Manganese	0.7 mg [*]
Phosphorus	46 mg [*]
Potassium	270 mg [*]
Sodium	4 mg (24 mg [*])
Zinc	0.4 mg [*]

^{*}Mature plant vs. sprouts

Nutrition Notes: *T. pratense*

Per 100 grams

37 calories, 4.2 g fat, 37 g carbohydrates, 5 g protein, fiber NA

Vitamin A	4430 IU (1330 mcg RE)
Vitamin C	71 mg
Calcium	64 mg
Copper	0.2 mg
Iron	16.3 mg
Magnesium	9 mg
Manganese	1.5 mg

Phosphorus	4 mg
Potassium	70 mg
Zinc	2.5 mg

Green Deane's Notes

Clover is so common that it's easy to ignore. Its human use, however, is limited and comes with some precautions (see Safety Notes). What's more, the older the plant gets, the tougher it is—young and tender is key. Generally speaking, white clover (*Trifolium repens*) is more nutritious than red clover (*T. pratense*)—the former has significantly more minerals than the latter, but less protein. (See boxes for more nutritional information.)

Secondly, never ... did you see that word? Never ferment and eat any part of fermented clover, especially Sweet Clovers (*Melilotus alba*, *M. indica*, and *M. officinalis*). You want your clover either completely fresh or completely, quickly dried, never in between. If not quickly dried, clover can produce a mold that inhibits blood clotting. That's where the rat killer Warfarin and the medicine Coumadin originated.

As for the blossoms, you likewise want young and fresh whether they're white or pink or red, though white clover is the best-tasting of them all. In addition to using dried flowers for tea, you can pan-roast the blossoms until they're nice and crispy and/or grind them into flour. The leaves are another matter: Young ones are digestible raw in small amounts (half a cup or so). Older leaves should be cooked, but I think you'd have to be hungry to eat them—they're a famine/survival food.

Common Reed

Phragmites australis

NOTABLE NUTRIENTS OR USES Vitamin C, calcium, phosphorus, magnesium, vitamin A

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION As FloridaGrasses.org says, “Enormous cane often seen rising with a plumose inflorescence from wet ditches.” Ligule just 1 mm; leaf blades not auriculate; spikelets unawned (no bristles or needle-like growths); internodes nonhairy. Looks similar to *Arundo* (Giant Reed) but usually has narrower leaves; shorter, thinner stems; and no hair on certain parts. More widespread in North America than *Arundo*.

TIME OF YEAR Year-round in warm climates, seasonal farther north. Flowers early or midsummer into fall. Seeds shed in the winter, can float in water up to four months.

RANGE Throughout the US except Alaska

ENVIRONMENT Wet areas, ditches, roadsides, median strips, railroad tracks, marshes, riverbanks, lakeshores, tidal wetlands

METHOD OF PREPARATION pickled, boiled, ground, and maybe more

Nutrition Notes

Per 100 grams

Leaves: 3.5 g fat, 63.7 g carbohydrates, 17.1 g protein, 27.4 g fiber

Stems: 0.8 g fat, 90 g carbohydrates, 4.8 g protein, 41.2 g fiber

Reed: 415 calories, 2.1 g fat, 72.7 g carbohydrates, 10.6 g protein, 31.9 g, fiber

Vitamin A	5.15 mg
Vitamin C	91–200 mg
Calcium	480 mg
Magnesium	130 mg
Phosphorus	60 mg

Green Deane's Notes

Some 30 years ago I pondered the identity of a very tall grass in a former marlpit in Port Orange, Florida, a few miles south of Daytona Beach. You might think there can't be that many tall grasses in the area, but you'd be surprised in a state with thousands of nonnative species. Furthermore, grasses can be maddening to identify, moreso even than mushrooms. They have a descriptive language all their own, experts are few, and the books on them sometimes cost thousands of dollars. It took me three tries to get it right. First I thought an *Arundinaria* (a bamboo genus), then an *Arundo*. I settled on *Phragmites australis*, the common reed, which can grow more than an inch and a half a day.

While the identification was difficult, it turned out to be a good find because the common reed has many uses as food, and for making everything from jewelry to boats. It's been around a long time, say the experts. They found evidence of it in 40,000-year-old sloth dung (now

there's a topic for cocktail-party chitchat), and it's been eaten by humans for ages as well. The common reed is perhaps more versatile than cattails—it's been harvested for roof thatching and for making splints, pen tips, hunting spears, arrows, rope, mats, baskets, pipes, clothing, and medicine. Children have attached mesquite branches to common reed stems to catch small fish and crabs.

Among the edible parts of *Phragmites australis* are the young shoots, which can be boiled or pickled and eaten like bamboo sprouts, and the leaves, which when partly unfolded can be treated as a potherb. A confection is made by taking a sugary gum out of the stems and shaping it into balls. The reed's rhizomes are sometimes cooked like potatoes, and its high-fiber grain is nutritious—if you're able to extract it from its hull to use. In Japan, young leaves are dried, ground, and mixed with cereal flour to make dumplings.

Usually, all the common reeds in a stand are clones. Each individual clone reed will likely live five to eight years; the stand itself may reach 1,000 years old. A stand provides shelter for various creatures but is not a major food source for any.

Coral Bean

Erythrina herbacea

NOTABLE NUTRIENTS OR USES No nutritional data available; antioxidants

SAFETY NOTES Seeds are toxic. All parts may contain harmful alkaloids. See notes below for how to prepare before eating.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Herbaceous bush 3–16 feet, can survive a lot of trimming. Three uterus-shaped leaves on each petiole; leaves lost in winter in cooler areas. Stems and leaves have small curved prickles. Bright-red flowers on spikes, may remain in dry areas after leaves have fallen.



TIME OF YEAR Flowers in early spring to early summer, depending on latitude; young leaves throughout the growing season

RANGE Southern tier of the United States, up the East Coast to Maryland, and up the West Coast

ENVIRONMENT Sandy woods, hardwood hummocks, dry tidewater areas, roadsides. Usually an understory plant among other bushes, but can grow in full sun.

METHOD OF PREPARATION Boil blossoms

Green Deane's Notes

There is a tradeoff with the (Eastern) coral bean. Brilliantly colored, it is very easy to identify. Certain parts are edible, and, according to a Japanese study, it contains at least five antioxidants. But you have to harvest carefully: Some of it is toxic, narcotic, and hallucinogenic.

The flowers are edible when boiled. I boil mine for 15 minutes in plenty of water. They turn green and limp and reduce in size, so collect a lot. The flavor is mild, like young spinach. Traditionally, the cooked blossoms are mixed with scrambled eggs. I do eat a raw red flower once in a while, but just one. To be safe, don't eat the blossoms raw—although a few authorities have said they are edible.

Do not eat the seeds—they are poisonous. Toxic alkaloids may be found in other parts of the plant and can have an effect similar to curare's. Most people know the coral bean—which also goes by the common name red cardinal—as a landscape plant; under cultivation and ideal conditions, it can reach 25 feet. It's easy to spot in season, though in the wild it is rarely more than a spindly bush.

One interesting thing about the plant is that it always turns its leaves toward the sun. It is beloved by hummingbirds. One of the quickest ways to get hummingbirds to your yard is to grow a coral bean—just keep kids away from the seeds. The Eastern Coral Bean may also be called the Cherokee

Bean, after the tribe that used a decoction of its root for ailments such as kidney and urinary blockage.

There are more than 110 *Erythrina* species. Many of the plants in the genus are planted as street and park trees. Some can grow to 100 feet high and are used as shade trees for coffee or cacao. The Western Coral Bean, *Erythrina flabelliformis*, has fan-shaped leaves and edible flowers. Other known edibles in the genus include *E. americana*, *E. berteroana*, *E. fusca*, *E. rubrinervia*, and *E. variegata*.

Coral Vine

Antigonon leptopus

NOTABLE NUTRIENTS OR USES No nutritional information available; protein, oil

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Twining vine that can reach 40 feet in length and clings and climbs with curled tendrils, evergreen in some climates. Leaves 1–3 inches or longer, heart-shaped, crinkly-edged, pronounced veins on underside, reticulated (wrinkled-looking) on top. Flowers arranged in panicles, pink or white, on branch terminals, bloom from spring to fall or even year-round.

TIME OF YEAR Roots whenever large enough to harvest; blossoms when in season (nearly year-round in warm areas, until frost elsewhere)

RANGE Mexico and Central America; the US southeast and Gulf Coast

ENVIRONMENT Flourishes with good water and plenty of sun but tolerates poor soil and a variety of light conditions. Likes pinewoods, fence rows, yards, disturbed ground, even marshy areas, though nearly any environment will do.

METHOD OF PREPARATION Roots boiled or roasted, seeds roasted and ground, flowers and leaves fried

Green Deane's Notes

Antigonon leptopus inspires local names everywhere it grows: Tallahassee Vine, Honolulu Creeper, Christmas Island Crawler, among many others. It's also called the Rose of Montana, but it does not grow in that state. While hungry people might view it as a reliable food source, in most countries where bellies are full, it's considered an invasive weed.

Lest you think the coral vine is just another pretty invader, it's medicinal as well, with antioxidant, anti-inflammatory, and analgesic properties. An extract of its leaves and flowers inhibits lipid peroxidation—activity by cell-damaging free radicals. A tea made from the leaves and blossoms is consumed to relieve symptoms of colds and flu, and research indicates that the plant may be useful in reducing blood-sugar levels.

As food, you can roast or boil the roots—they are nutty (some say you can eat the roots raw, but I do not know firsthand). Leaves and flowers can be battered and fried, and are good served with pasta. The fried flowers are also mixed into omelets. Seeds can be roasted, winnowed (they winnow better after roasting), then ground and used like flour.

Related to the sea grape and in the buckwheat family, the coral vine is well equipped to proliferate. It produces a huge amount of seeds, which float. The fast-growing plant can also reproduce via its edible roots, which get

larger with age. Climbing by tendrils, the coral vine tends to smother what it ascends. At least 40% of the vine's flowers are open at any given time.

Crabgrass

Digitaria sanguinalis

NOTABLE NUTRIENTS OR USES Potassium, magnesium, calcium, protein

SAFETY NOTES Possible allergen. Avoid any crabgrass with purple or black mold on it.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION A mat-forming grass, rooting at the nodes. Leaves alternate, long, grasslike, some parallel veins, pointed tip, toothless. Flowers tiny, stalkless, flattened along branches.

TIME OF YEAR Seeds in fall, best after a frost

ENVIRONMENT Sandy soil, poorly tended lawns, gardens, old fields, roadsides, waste places

METHOD OF PREPARATION Stripped-off seeds can be toasted and ground into flour or used as a grain.

Green Deane’s Notes

It would be difficult among the “decapitated grass” crowd—lawn owners—to find a more hated foe than crabgrass. Millions of dollars are spent annually trying to chemically choke it to death; uncounted hours are passed on hands and knees yanking it from yards; air is polluted with crabgrass-inspired profanity. Even the name suggests a loathsome disease: Your lawn has crabs. My solution? Eat the weeds.

Nutrition Notes	
Per 100 grams	
170 calories, 0.5 g fat, 29 g carbohydrates, 7% protein, 1–2% fiber	
Vitamin B1 (thiamine)	0.17 mg
Vitamin B2 (riboflavin)	0.22 mg
Vitamin B3 (niacin)	1.15 mg
Iron	12 mg
Magnesium	70 mg
Potassium	260 mg
Sodium	30 mg
Zinc	1.5 mg

Lawn folks hate crabgrass for two main reasons: It does not look like other common lawn grasses, so a patch of it stands out, and it does not grow consistently, so a lawn with crabgrass can look spotty. Adding to the manicured mania is the fact crabgrass can produce some 150,000 seeds per plant. Nature plays hardball: Lawn grass is weak, crabgrass is strong, and if folks didn’t constantly fight crabgrass it would win. For that matter, trees would win over grass, but grass has enlisted humans in its war against trees, so we keep the trees at bay as well. Lawn grass survives because it has human allies.

After crabgrass was introduced in the United States in the mid 19th century, the newly formed Department of Agriculture aimed to make it a main agricultural crop. It was a regular part of the diet of immigrants from eastern Europe, who called it kasha (or kasza), now the name of an edible grain in the buckwheat family. But once corn was developed as an agricultural crop, growers realized corn and wheat could be grown just as easily and was worth more money than Crabgrass. That began its transition from valued food to hated weed.

While we try to get rid of crabgrass in America, in parts of Africa, types known as fonio (*Digitaria exilis* and *Digitaria iburua*) are a staple grain. Crabgrass is not only nutritious but one of the world's fastest-growing cereals, producing edible seeds in six to eight weeks and as much as a whopping 17 tons per acre. It grows well in dry areas with poor soil, and fantastically well in watered lawns.

If you want to use crabgrass seeds in food, husking the small grains can be time-consuming. One way is pounding them in a mortar with sand (it helps pop them open), then separating the grains and sand. Another method, which produces a toasted grain, is "popping" seeds over a flame (continually tossing them in a pan) and then pounding them. You can even buy a crabgrass-husking machine. Untoasted, it can be used like rice. Crabgrass seeds (toasted) can be made into a flour, couscous, and porridge or fermented for use in beer making. Now that's a label I'd like to see: Crabgrass Beer.

Cranberry

Vaccinium macrocarpon

NOTABLE NUTRIENTS OR USES Lutein and zeaxanthin, choline, potassium, calcium, vitamin A

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Low-growing mat, usually less than 1 foot high. Small, glossy, leathery leaves, bronzy in spring and dark green in summer; white to pink, tube-shaped, four-petaled flowers in clusters, followed by a dark-red fruit.

TIME OF YEAR Fruit ripens September or October

RANGE northern portions of North America

ENVIRONMENT Likes sandy soil, bogs, dry land

METHOD OF PREPARATION Many, including as sauce, wine, and ingredient. Cranberries can also be eaten fresh on the trail, but they are sour.

Nutrition Notes

Per 100 grams

39 calories, 0.4 g fat, 9.4 g carbohydrates, 4 g sugar, 0.3 g protein, 3.8 g fiber

Vitamin A	3 RE
Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.02 mg
Vitamin B3 (niacin)	0.1 mg
Vitamin B6 (pyridoxine)	0.06
Vitamin B9 (folic acid)	1 mcg
Vitamin C	14 mg
Vitamin E	1.32 mg
Calcium	8–24 mg
Copper	0.056–1 mg
Iron	0.3 mg
Magnesium	6–11 mg
Manganese	1 mg
Phosphorus	11–23 mg
Potassium	80 mg
Selenium	0.1 mcg
Sodium	0.6 mg
Zinc	0.09–1 mg
Beta-carotene	38 mcg
Choline	5.5 mg
Lutein and zeaxanthin	91 mcg

Green Deane's Notes

Fresh or frozen, cranberries are sour. There's a reason for that: They contain tannins, which can make food taste sour or bitter, but which have antioxidant activity. Cranberries also are less than 4% sugar. The plant doesn't need to attract animals to spread its seeds around. Instead, it has a

small hollow spot in the middle that makes it float. Flowing water does the job of distribution.

In my Maine youth, I was surprised to discover cranberries don't have to grow in water: One day, I found a fresh patch atop a small hill, near a pond but watered by rain. We think cranberries grow in water because of commercial operations at harvesting time, which are flooded to cover the plants and protect them from cold weather.

Cranberries are such a common commercial crop—approaching a million tons annually—that few people think of collecting them in the wild. Then again, they are popular because they're usually heavily sweetened however they're served.

One of my favorite uses of cranberries is adding them, along with chopped walnuts, to wild rice—the character of the cranberries makes it a delightful dish. I also make cranberry wine. Fresh cranberries can be frozen and will keep more than a year (I have several pounds in my freezer). They can be used directly in recipes without thawing. Juice, muffins, and, of course, sauce for the Thanksgiving table are some of the many ways to use cranberries.

Vaccinium macrocarpon is the most common cranberry in the northeastern United States. *Vaccinium oxycoccos* is another US species. Cranberries are cousins to blueberries, huckleberries, and bilberries, which are all *Vaccinium*. All berries with a crown are nonpoisonous, but they are not all palatable. Closely related to the cranberry is the lingonberry, *Vaccinium vitis-idaea*, also called the mountain cranberry or Low Bush Cranberry and collected in northern countries including Canada and Scandinavia.

Creeping Cucumber

Melothria pendula

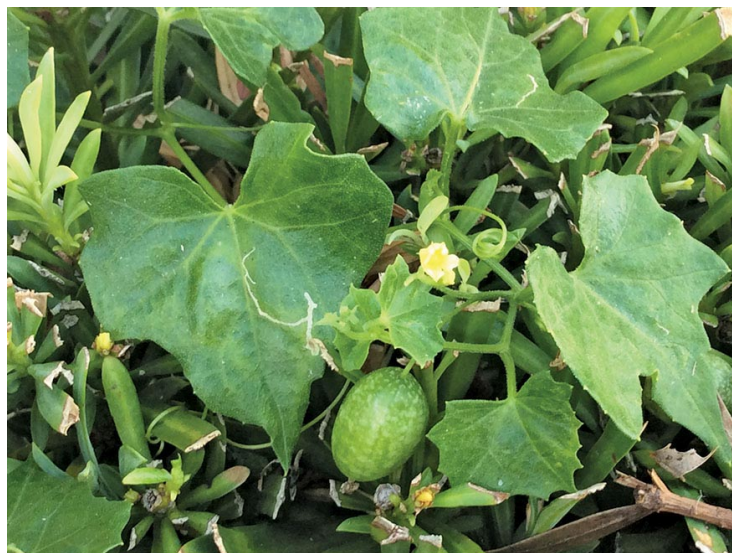
NOTABLE NUTRIENTS OR USES Calcium, sodium, magnesium, protein, vitamin C

SAFETY NOTES See below for details. Only harvest unripe fruit.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial vine with slender, climbing stems and curled tendrils; resembles English ivy but more delicate; can reach many feet long and form mats or spiderweb-like drapes. Leaves dark green, about 2 inches long, with three to five lobes. Flowers small, yellow, five-petaled, notched at end. Fruit looks like doll-size watermelon, green and mottled when unripe, black when ripe, whitish seeds.



Nutrition Notes

Per 100 grams	
calories NA, 8% fat, 56.8% carbohydrates, 12.6% protein, 16.3% fiber, 8.7% lipids	
Vitamin C	4.76 mg
Calcium	58.4 mg
Magnesium	9.12 mg
Sodium	35.5 mg

TIME OF YEAR Fruit in summer in northern climes, all year in southern areas if no frost

RANGE Pennsylvania to Florida, west to Nebraska and Texas

ENVIRONMENT They grow in spots ranging from moist to occasionally watered: along edges of marshes, sandy roadsides, low woods, parking lot shrubs, almost any fence.

METHOD OF PREPARATION Raw or pickled when young and light green

Green Deane's Notes

If you search the internet for *Melothria pendula*, you will find two contradicting comments—that it's edible and that it's toxic. The state of North Carolina calls it mildly toxic, the state of Florida does not; one person says it is harmless, another says it is harmful. What they say in their own way is that at some point *Melothria pendula* becomes the mother of all laxatives.

I've eaten a lot of light- to medium-green *M. pendula* at a time with no problem and have known others to eat them as well. Many people put them in salads as they would cherry or grape tomatoes, which are similar in size to the cukes.

The fruit of *M. pendula* (also called the Guadeloupe Cucumber or Mouse Cucumber) is only about a half inch long and looks like a perfect, smooth miniature watermelon. But it has a definite cucumber aroma and taste, sometimes a slightly tart cucumber taste. The cukes are crisp when light

green, but they grow mushy when dark green and start to taste and smell bad at that stage.

So where does the problem lie? Probably with ripening: The little cucumbers turn black as they ripen, and that's a good sign to leave them alone. I suspect that if the seeds are purgative, it's when they're mature, which is what happens to another gourd, *Momordica charantia* (bitter melon). Another cuke close in size and use to *M. pendula* but with no reports of laxative issues when ripe is *Melothria scabra*, or the Mexican Sour Gherkin. Its seeds can be ordered from a variety of sellers online.

Crowfoot Grass

Dactyloctenium aegyptium

NOTABLE NUTRIENTS OR USES Protein, carbohydrates, potassium, sulfur, amino acids (especially glutamic acid)

SAFETY NOTES Grass (not seeds) toxic in hot weather

NATIVE STATUS Introduced



Green Deane’s Itemized Plant Profile

IDENTIFICATION Spreading, creeping, mat-forming grass, with roots at lower nodes. The seed head has five to seven (but as few as two) spikelets at the tip of the stem—in an arrangement that looks like a crow’s foot.

Nutrition Notes	
Per 100 grams	
345 calories, 1.9 g fat, 68 g carbohydrates, 15.7 g protein, 2.8 g fiber	
Calcium	1.07 mg
Copper	0.7 mg
Iron	1.21 mg
Manganese	0.22 mg
Phosphorus	460 mg

Potassium	0.39 mg
Sodium	0.02 mg
Zinc	0.69 mg
Aluminum	1.72 mg
Sulfur	0.18 mg

TIME OF YEAR Fall, when the top separates easily from the stem

RANGE Maine to California

ENVIRONMENT Heavy, damp soil to sandy, arid soil

METHOD OF PREPARATION Used like any grain, but because of its size and texture best made into flour

Green Deane's Notes

I call this helicopter grass because the “fingers” of the flower are on the same plane, like a helicopter’s rotor. The USDA calls it Egyptian grass but also lists crowfoot grass and Beach Wiregrass as common names. Though there are other members of the *Dactyloctenium* genus, *D. aegyptium* has no lookalikes, so it should be easy to spot.

Do not eat the grass itself—in hot weather it can be toxic. You eat the seeds, which grow on the underside of the fingers, like teeth on a comb. Each plant can have 60,000 seeds. In season, it’s not difficult to collect enough for a side dish for one or two people, or larger amounts for storage. They’re about the size of grains of table salt, golden in color, and have the texture of sand. But tasty, edible sand.

Crowfoot grass is an extremely versatile grain and can be cooked in water, roasted, milled, even fermented. I even eat the ripe seeds raw on the trail. I like to mix them with some water and olive oil, cook for about 10 minutes (until the water is evaporated), and enjoy. Raw or cooked, the grain has a similar flavor and texture. I suspect it is not a popular food because of its texture, which, of course, is significantly changed if milled into flour. That

is its best use by far, in my opinion. A traditional East African bread made with the flour is called *kisra*.

The only problem I've had with crowfoot grass is dirt getting in with the grains, since the plant is only around a foot high. To harvest, I simply tug at the tan seed heads—if they let go, they are ready (if not, leave them because green seeds are not ready to eat). The easiest way to remove the hulls is vigorously rubbing the seed heads in your hands over a colander, which is held over a window screen or other type of mesh screen over a bowl. The screen catches most of the chaff; the seeds drop through. Pick out any remaining chaff and gently blow away the rest, leaving a pile of gold-orange grain. You can accumulate a couple of quarts an hour this way.

Currant

Ribes spp. (nonthorny)

NOTABLE NUTRIENTS OR USES Vitamin C, potassium, phosphorus, calcium, magnesium

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Shrubs rarely more than 6 feet high. Leaves remind one of maple leaves, usually with scalloped edges, three to five lobes, veins that fan out. Crushed leaves can have a skunklike, citrusy, or spicy aroma. Flowers white, yellow, or red. Berries grow in clusters, green when unripe, then black and blue or red and gold, with stripes up and down.

Nutrition Notes

Per 100 grams

56 calories, 0.2 g fat, 12.1–13.8 g carbohydrates, 7.36 g sugar, 1.4 g protein, 4.3 g fiber

Vitamin A

2 mcg RAE or 42 IU

Vitamin B1 (thiamine)	0.04 mg
Vitamin B2 (riboflavin)	0.05 mg
Vitamin B3 (niacin)	0.1 mg
Vitamin B5 (pantothenic acid)	0.064 mg
Vitamin B6 (pyridoxine)	0.07 mg
Vitamin C	41 mg
Vitamin E	0.1 mg
Calcium	33 mg
Copper	0.11 mg
Iron	1 mg
Magnesium	13 mg
Manganese	0.2 mg
Phosphorus	23–44 mg
Potassium	257–275 mg
Selenium	0.6 mcg
Sodium	2–20 mg
Zinc	0.23 mg
Lutein and zeaxanthin	47 mcg

TIME OF YEAR Fragrant flowers April to June, ripe fruit early fall

RANGE All of North America except Alabama

ENVIRONMENT Full sun, afternoon shade in warm climates, well-drained medium to heavy soils

METHOD OF PREPARATION Anything you might do with a berry

Green Deane's Notes

Currants and gooseberries comprise the *Ribes* genus, and there are a lot of species of each. Gooseberries (see [page 142](#)) are heavily armed with spines and prickles; currants are not. Therein lies a great distinction and less pain.

Names of the 50 or so species of currants are often changing. Wild currants like cooler weather, so you find them above the Mason-Dixon line more

than below it. But they grow in almost every state. I used to see them around abandoned houses in rural areas of Maine.

Some wild currants are tart and others sweet, some strong-smelling and others not. Eat currants right after picking, or make preserves, jam, or jelly with them. Underripe berries have more pectin. You can also use currants for pie filling, garnish, or as a salad addition.

Indigenous people consumed at least 40 varieties of currants. They were eaten fresh, cooked, or dried—though dried ones would usually not be stored for long but eaten that season. Natives also mixed currants with other berries to produce certain flavors or made wine from them.

Dandelion

Taraxacum officinale

NOTABLE NUTRIENTS OR USES Potassium, vitamin A, vitamin C, vitamin E; lutein and zeaxanthin

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Leaves up to a foot long, deeply indented (like large sawteeth), always growing rosette at the base, last lobe pointing away from the plant. The familiar flower is made up of hundreds of little rays and turns into a powder puff.

TIME OF YEAR Spring and summer in northern climes, fall and winter in warm climates

Nutrition Notes

Greens, per 100 grams

45 calories, 0.7 g fat, 9.2 g carbohydrates, 2.7 g protein, 3.5 g fiber

Vitamin A	508 RAE
Vitamin B1 (thiamine)	0.19 mg
Vitamin B2 (riboflavin)	0.26 mg
Vitamin B3 (niacin)	0.81 mg
Vitamin B5 (pantothenic acid)	0.08 mg
Vitamin B6 (pyridoxine)	0.25 mg
Vitamin B9 (folic acid)	27 mcg
Vitamin C	35 mg
Vitamin E	3.44 mg
Vitamin K	0.78 mg
Calcium	187 mg
Iron	3.1 mg
Magnesium	36 mg
Manganese	0.34 mg
Phosphorus	66 mg
Potassium	397 mg
Selenium	0.5 mg
Sodium	76 mg
Zinc	0.41 mg
Beta-carotene	5.85 mg
Choline	35.3 mg
Lutein and zeaxanthin	13.61 mg

RANGE native to Eurasia, but introduced globally

ENVIRONMENT Lawns, meadows, fields, disturbed areas

METHOD OF PREPARATION Leaves boiled, roots boiled or roasted, flowers fried or used to make wine

Green Deane's Notes

Dandelions and I go back a long ways, 65 years or so. When I was a child in Maine, my mother would hand me a knife and a large paper shopping bag and send me out to find dandelions for supper, not only in our yard but in the pastures across the street. My stepfather liked the bitter greens, so I

picked them often. Wild strawberries and checkerberries grew in the same pastures in the spring. Heck, I was full of dessert before I came home for supper.

In those days, dandelions were free greens and flavoring for coffee—their nutrition wasn't really on anyone's mind. But the plant is anti-inflammatory and a rich source of vitamins and minerals, especially potassium. It's estimated that as many as 98% of Americans don't consume enough potassium. That's quite a problem when every cell in the body needs potassium. If you don't have enough potassium for all functions, the body prioritizes use based on short-term survival needs: Functions such as keeping your heart running get priority, so less critical needs may not be met. Over time, that can fester into a bigger problem, according to the so-called triage theory by Bruce Ames, University of California, Berkeley professor emeritus of biochemistry and molecular biology.

To consume the nutritious dandelion, you can put young greens in salads or cook slightly older leaves as a potherb. The greens are bitter (especially when young), so even for a salad, it's best to boil them first and let them cool. When you cook the leaves, drop them into boiling water. They will taste better than if you bring the water to a boil with the greens already in it. You can also boil or roast roots to eat, though they are bitter too. The flowers can be batter-fried. Just be sure to exclude any green parts of the flowers.

Some sources claim dandelion wine is made from the leaves; I know from personal experience it is made from the blossoms, yellow parts only (or at least should be). When I was around 15, I made dandelion wine and put it in returnable Coca-Cola bottles. The wine was “dry” and perhaps an acquired taste, but it went down easily enough and had a suitable kick. I remember a neighbor who dropped by one night and downed a considerable amount, saying, “That's pretty good stuff” each time a new bottle was opened. Good thing he was walking.

Dandelions are in the aster family. They have no poisonous lookalikes, but some similar plants are not at all tasty (see entry for false dandelion, [page 122](#)). While evidence suggests humans were eating dandelion roots as far back as 25,000 years ago, the plant has a modern secret: Its fluff is aeronautically gifted. Each seed is attached to a tiny parasol comprised of fine bristles, which deflect the wind and create a vortex that induces lift. In the future you might see miniature drones or maybe even large wind generators shaped like Dandelion fluff. And you thought they were just passively floating around.

Daylily

Hemerocallis fulva

NOTABLE NUTRIENTS OR USES Vitamin A, vitamin C, phosphorus, potassium, calcium

SAFETY NOTES Daylily and true lilies are toxic to cats. Licking the pollen alone can destroy a cat's kidneys.

NATIVE STATUS Naturalized



Nutrition Notes

Per 100 grams

42 calories, 0.4 g fat, 12 g carbohydrates, 2 g protein, fiber NA

Vitamin A	3000 IU
Vitamin B1 (thiamine)	0.16 mg
Vitamin B2 (riboflavin)	0.21 mg
Vitamin B3 (niacin)	0.8 mg
Vitamin C	88 mg
Calcium	87 mg

Iron	1.2 mg
Phosphorus	176 mg
Potassium	170 mg
Sodium	24 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Rosette of basal leaves that have parallel veins, are hairless, taper gradually like a sword, and tend to bend down from the middle and look droopy. Out of center of the rosette are one or more flowering stalks 3–6 feet high, hairless with a few green bracts. Unspotted large flower faces upward, each with six stamens and six orange tepals (three orange petals and three orange sepals, making the flower appear to have six petals), the inner three broader than the outer three. Flower's throat is yellow with a red band around it, rest of flower is orange. As the name implies, flower is open for only a day. Buds up to 3 inches long. If seed capsules are produced, they are three-celled and have rows of black seeds. The roots, tuberous and yellow, are fleshy rhizomes that grow fibrous with age.

TIME OF YEAR Blooms for about a month in April–May in the South, June–July in North

RANGE native to Eurasia, but cultivated in the US

ENVIRONMENT Sunny fields, roads, empty lots, old homesteads, escaped from flower gardens

METHOD OF PREPARATION Flowers, buds, seedpods, roots raw or cooked

Green Deane's Notes

The daylily, a standard plant in foraging for at least a century, has become too much of a good thing. There are now too many of them, which may sound positive for foragers but isn't, because it has led to uncertainty about edibility.

When the daylily was first imported to North America in the 1600s, it was only the unspotted orange kind, *Hemerocallis fulva*, which was edible top to bottom. *H. fulva* was the sole daylily in North America for 200 years or more. By the 1930s, though, breeders started to create new daylilies, and now there are some 60,000 cultivars. They have been bred for color, height, the number of petals, and other qualities. Not all are edible. So while it is fairly easy to identify the original daylily and a daylily cultivar, finding out if the latter is edible is the challenge. Don't presume any daylily other than the original is edible.

The yellow *Hemerocallis lilioasphodelus*, the only daylily besides *H. fulva* that has become naturalized in the United States (it looks similar and is wrongly called *H. flava*), is edible, according to the Michigan State University horticulture department. Blame them, not me, if it is not. *Hemerocallis minor* is also reported as edible. I do not know if that's accurate.

Hemerocallis fulva's young spring shoots and leaves under 5 inches taste similar to mild onions when fried in butter. The leaves quickly become fibrous, so they can only be eaten young (but you can make cordage out of older leaves). The flower buds, a rich source of iron, are distinguished from the plant's nonedible fruit by their internal layering. The blossoms are edible raw or cooked, as are seeds if you find any. Closed flower buds and seedpods are good raw in salads or boiled, stir-fried, or steamed with other vegetables. The blossoms add sweetness to soups and vegetable dishes and can be stuffed like squash blossoms. Half and fully opened blossoms can be dipped in a light batter and fried tempura-style.

Dried daylily petals—usually from *H. graminea*—are an ingredient in many Asian recipes. The nutty, crisp roots can be harvested nearly any time of year but are best in the fall. They can be eaten raw or cooked, as long as they're new, white tubers. Older, brown roots have poor taste and texture. Don't go overboard with any part of the plant because it is laxative,

particularly the yellow blossoms. Shoots and leaves are a mild painkiller and in large quantities are hallucinogenic.

H. fulva is a survivor: It will grow nearly anywhere with sun and water, and it often outlives the buildings it was put around. In many countries where people do not have to eat it to survive, it is considered an invasive weed. Since it is sterile, it reproduces by underground rhizomes and thus spreads. Cultivated daylilies stay in clumps and are not considered invasive. Research has indicated strong antioxidant activity in *H. fulva*. Imagine that: an invasive weed with health benefits.

Deerberry

Vaccinium stamineum

NOTABLE NUTRIENTS OR USES Protein, fiber

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Nutrition Notes

Per 100 grams

0.63 percent protein, 1.88 percent fiber

Green Deane's Itemized Plant Profile

IDENTIFICATION A moderate-size bush with bell-shaped, blueberry-like blossoms (crown blossoms) that have long stems and stamens extending

past petals. Fruit ranges from green to ruby. There is one report of blue deerberries. I have never seen a blue deerberry. Young green leaves have a white blush underneath, an easy-to-spot characteristic.

TIME OF YEAR Spring in South, later in year in northern areas

RANGE Eastern half of North America

ENVIRONMENT Near floodplains but can thrive in oak and pine scrubs

METHOD OF PREPARATION Out of hand

Green Deane's Notes

I suspect deerberries can be used like green apples, since like those apples, the berries may be tart or sweet. The best way to eat them, though, is just picked off the bush. We don't have a lot of nutritional data on the deerberry, but a 2007 study said the fruit had "potent free radical scavenging activities," as it inhibited the proliferation of leukemia and lung cancer cells in tests.

The easy-to-identify deerberry is associated with very wet conditions, but I do know of two locations where it grows that are high and dry, watered only by rain. There is disagreement on the color of the ripe fruit: green or ruby red. I have found them both ways—perhaps there are subspecies. The ruby ones are definitely sweeter than the green ones.

There also is disagreement over the etymology of *Vaccinium*, the genus for the deerberry, blueberries, and huckleberries. It supposedly got this name, translated as "pertaining to cows" (*vacca* is "cow" in Latin), because the fruit reminded Carl Linnaeus, the namer of plants, of his native Sweden's wild lingonberries, which are also called cowberries. But some internet "experts" say it came from *bacca*, a Latin word for "berry," and others claim it derives from the Greek *hyacinthos* and/or *vakinthos*, a dark-flowered, orchid-like plant. The inoculating shot is called a vaccination

because the original vaccinations for smallpox were made from cowpox. However, modern research on old samples suggests those vaccines were more horsepox than cowpox. So perhaps the shot should be an equination and the genus *Equinium*.

Dock

Rumex spp.

NOTABLE NUTRIENTS OR USES Manganese, phosphorus, potassium, vitamin A, vitamin C

SAFETY NOTES Like all plants with oxalic acid, it should be consumed in moderation. Some people may be allergic. Also, confirm your species identification is correct before consuming; there are many, many *Rumex* species.

NATIVE STATUS Native



Green Deane's Plant Profile

IDENTIFICATION *Rumex crispus*, coarse, stout perennial herb to around 5 feet with erect, flowering stems when mature. Leaves alternate, long, edges curled or crimped, upper leaves less wavy than those near bottom.

TIME OF YEAR Usually spring to fall; in warm climates, fall to spring

RANGE Native to Europe, but found globally

ENVIRONMENT Pastures, grassland, gardens, waste sites, ditches, almost any disturbed area

METHOD OF PREPARATION Leaves raw or cooked, young sprouts and leaves raw before they get bitter, seeds dried

Nutrition Notes: *R. crispus*

Leaves, per 100 grams

Boiled or raw: 22 calories, 0.7 g fat, 3.2 g carbohydrates, 2 g protein, 3 g fiber

Vitamin A	3474 IU (boiled), 4000 IU (raw)
Vitamin B1 (thiamine)	0.04 mg (raw)
Vitamin B2 (riboflavin)	0.1 mg (raw)
Vitamin B3 (niacin)	0.5 mg (raw)
Vitamin B5 (pantothenic acid)	0.04 mg (raw)
Vitamin B6 (pyridoxine)	0.122 mg (raw)
Vitamin B9 (folic acid)	13 mcg (raw)
Vitamin C	26.3 mg (boiled), 48 mg (raw)
Calcium	44 mg (raw)
Copper	0.13 mg (raw)
Iron	2 mg (boiled), 2.4 mg (raw)
Magnesium	89 mg (boiled), 103 mg (raw)
Manganese	0.35 mg (boiled)

Green Deane's Notes

Mainer Merritt Fernald, a Harvard botany superstar from around 1900 to 1950, said all the 17 native *Rumex* species in North America were edible. He completely failed to mention most of them are so bitter it would take days of boiling to make them palatable, if ever.

Gastronomically there is a great divide in the *Rumex* genus, which includes about 200 species and is part of the buckwheat family. Bitter *Rumex* are referred to as docks; a few are tart ([page 260](#)) and are referred to as Sorrels.

Those used for their bitter leaves alone include: *R. arifolius*, *R. conglomeratus*, *R. crispus*, *R. hymenosepalus*, *R. mexicanus*, *R. occidentalis*, *R. salicifolius*, *R. venosus*, *R. violascens*, and *R. patientia* (the latter is cultivated in Europe and used like spinach.)

Used for their leaves and seeds are: *R. crispus* (curly dock), *R. obtusifolius* (also called butter dock) *R. patientia*, *R. pulcher*, and *R. sanguineus*.

Eaten for their tart flavor are: *R. acetosa*, *R. acetosella*, *R. aquaticus* var. *fenestratus*, *R. articus*, *R. paucifolius*, *R. rugosus*, *R. sagittatus*, *R. vesicarius*, and *R. scutatus*. *R. scutatus* is too acidic to eat but is used for flavoring.

A couple of species split the difference: *R. alpinus* has stalks that are used like rhubarb; *R. hymenosepalus* is another example. It's also called canaigre.

There are rumblings among botanists to move the tart *Rumex* species into their own unique genus. (Don't hold your breath.)

Dollarweed

Hydrocotyle umbellata

NOTABLE NUTRIENTS OR USES Fiber, protein, vitamin E, potassium, calcium

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Creeping perennial with long, slender, smooth stems; round leaves scalloped with stems attached in the middle; rarely found in blossom.

TIME OF YEAR Year-round

RANGE Native to North America and portions of South America

ENVIRONMENT Anyplace damp or wet, including lawns and parks. Don't collect from ditches.

METHOD OF PREPARATION Raw or cooked

Nutrition Notes: *H. asiatica*, *H. javanica*, *H. vericillata*

Per 100 grams

3–5% fat, 23–28% carbohydrates, 11–12% protein, 41–46% fiber

Vitamin B1 (thiamine)	0.93–1.35 mg
Vitamin B6 (pyridoxine)	0.64–0.81 mg
B12 (cyanocobalamin)	0.21–0.34 mg
Vitamin C	46–73 mg
Vitamin E	2.69 mg (<i>H. vulgaris</i>)
Calcium	1190.94 mg (<i>H. javanica</i>)
Iron	340.2 mg (<i>H. javanica</i>)
Phosphorus	375.57 mg (<i>H. javanica</i>)
Potassium	2820 mg (<i>H. javanica</i>)
Beta-carotene	26–29 mg

Green Deane's Notes

It's one of those practices of civilization that plants with scant flavor or calories—lettuce, for example—are often esteemed and popular, but plants that can sustain you have herbicides heaped on them because they're in your lawn. Plant in point: dollarweed. This perky ginseng relative is a prime invader of overwatered lawns. You can't blame it. Lawns offer near-perfect conditions: sunny above, damp below, only decapitated grass for competition.

Hydrocotyle species have many names and cash attached to them. You can buy them in powdered form in health food stores, as tea or soda in Asian markets (the soda is intensely sweetened and godawful), and as a side dish in Asian restaurants.

H. umbellata, our main lawn interloper, is also known as the Many-Flower Marsh Pennywort. Its close cousin *H. bonariensis* (Large-Leaf Pennywort) is equally edible and typically grows larger. One often sees limpkins (wading birds) running across the top of a floating mass of marsh

pennywort, hoping to turn bug into bird. *H. mexicana* and *H. vulgaris* are other edible types.

Dollarweed tastes like carrot tops or parsley on steroids. Eat the leaves raw or cooked like any other green. The University of Florida reported that dollarweed leaves *and* blossoms are edible—and high in vitamin E. The plant also contains vitamin B12 (cyanocobalamin), which is mostly found in animal sources, and a range of minerals including calcium, potassium, copper, iron, manganese, and zinc. Consuming large amounts of raw dollarweed can lower blood pressure.

Duck Potato

Sagittaria spp.

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, magnesium, calcium, iron

SAFETY NOTES Do not mistake for *Peltandra virginica* (tuckahoe or arrow arum), which looks similar but has veinless leaves and blossoms differently —Tuckahoe root burns after you chew it.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION *Sagittaria latifolia*, grows to 3–6 feet above water; veined, lance-shaped leaves 2–4 inches wide; large, white, three-petaled flowers on long separate stalks.

TIME OF YEAR Year-round

RANGE North America and Mexico

ENVIRONMENT Shallow, unpolluted water of swamps, ditches, lakes, and streams

METHOD OF PREPARATION Tubers boiled or roasted, young leaves and stalk boiled, rhizome tips raw or cooked, flower petals raw

Nutrition Notes

Per 100 grams

103 calories, 0.2 g fat, 20 g carbohydrates, 4.7 g protein, 0.8 g fiber

Vitamin B1 (thiamine)	1.6 mg
Vitamin B2 (riboflavin)	0.25 mg
Vitamin B3 (niacin)	1.4 mg
Vitamin C	5 mg
Calcium	12 mg
Iron	6.6 mg
Magnesium	51 mg
Phosphorus	165 mg
Potassium	922 mg
Zinc	0.7 mg

Green Deane's Notes

Duck potatoes are chestnut-size tubers—corms, really—that fan out around the base of *Sagittaria*, or arrowhead, plants. Rummaging around the shallow-water plants with your feet is a good way to find them. A small rake works well too. Pulling the plant up doesn't.

Boil or roast duck potatoes (cut off sprouts first) as you would regular potatoes, then eat them or mash them or prepare them any way you would other potatoes. They should be peeled before eating. The tubers can also be dried and ground into powder for soups and bread. They don't taste good raw—too bitter—but the petals of the white blossoms are edible raw. They taste delicate, semisweet, a little minty. Other edible parts of *Sagittaria* include the young, unfurling leaves and stalk. Boil them like any green. The

flower stalks before blossoming are also a tender tidbit; again, boil them. Lastly, the lateral tips of the growing rhizomes can be eaten raw or cooked.

Lewis and Clark ate duck potatoes on their famous expedition, according to their diaries. You know who doesn't eat duck potatoes? Ducks. They may eat the seeds or from time to time young duck potatoes, but generally the potatoes are too big for them.

Other common names for *Sagittaria* are wapato and Katniss. Species include *S. latifolia*, whose leaves are wide and triangular-ish; *S. lancifolia*, with leaves like spear points; and *S. graminea*, which has grass-shaped leaves similar to those on cattails. Generally, the bigger the leaf, the larger the potatoes. *S. latifolia* tends to have the best "duckies." *S. latifolia* and *S. graminea* don't have potatoes per se, but the ends of their stalks are edible, like lower cattail stalks, and contain starch.

Many years ago I dug up two *S. lancifolia* and stuck them in a half-filled barrel with lots of water and rich muck. They were very happy for several years: They grew beautifully and flowered wonderfully, but they didn't beget a single spud. If by chance you want to try duck potatoes without getting wet, check your nearest Asian markets, which sometimes carry them for Lunar New Year.

Eastern Gamagrass

Tripsacum dactyloides

NOTABLE NUTRIENTS OR USES No nutritional data available; protein, carbohydrates, fiber

SAFETY NOTES See seed preparation notes below.

NATIVE STATUS Native to prairies of central United States



Green Deane's Itemized Plant Profile

IDENTIFICATION Grass growing in fountain-like clumps up to 9 feet tall and 4 feet wide. Leaves erect, up to 2.5 feet long and 1 inch wide, with ligules that are a fringe of hairs. Frost turns leaves red and bronze. Stems can reach 6 feet long. Flower spikes rise above leaves on slender stems, with many tightly fused spikelets that take on the appearance of being “jointed” and having golden grains of rice hanging from them. Rootstock usually wider than plant.

TIME OF YEAR Flowers late spring to midsummer (maybe earlier farther south), seeds summer to fall

RANGE East of the Rockies except New England

ENVIRONMENT Moist areas around lakes, streams, swamps, ditches, etc. Full sun, fertile soil.

METHOD OF PREPARATION Seeds ground into flour or cooked whole

Green Deane's Notes

Eastern Gamagrass's history as food goes back to 2300 BC, according to archaeological findings. Some scientists think it was involved in the development of maize. One problem with Eastern Gamagrass as a grain crop has been described as "excessive maleness:" 65 times more male flowers than female. This limits production.

Though it's an ancient and well-researched grain, there is little nutritional information on Eastern Gamagrass from the human point of view. From animal feeding studies, we know the seeds are 27% protein, at least 51% carbohydrates, and nearly 65% insoluble fiber. It has three times the protein of corn and twice the protein of wheat.

The seeds are hard to prepare for human consumption because their hulls are thick and tough. Winnowed seeds can be used like wheat—grind them into flour if you have enough (or mix with another grain). Unmilled grains will pop like popcorn, and can also be cooked whole like wheatberries or made into a thin porridge. Cattle love Eastern Gamagrass so much farmers sometimes called it "Ice Cream Grass," as the cattle devour it readily.

Eastern Redbud

Cercis canadensis

NOTABLE NUTRIENTS OR USES Vitamin C, protein, antioxidants

SAFETY NOTES No known safety issues

NATIVE STATUS Native east of the Rockies



Nutrition Notes

Flowers, per 100 grams

Vitamin C

69–82 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Small deciduous tree, typically 20 feet tall, gradually ascending branches. Alternate, simple, broadly heart-shaped leaves 3–5 inches high and wide, emerge reddish and turn green. Flowers rosy pink with purplish tinge, have wings and keel, develop before leaves in spring, in clusters along branches.

TIME OF YEAR Flowers in spring, followed by pods; seeds in fall

RANGE Native east of the Rockies in the US and south to Mexico

ENVIRONMENT Full or partial sun, well-drained soil, often planted as an ornamental or growing along the edges of open spaces

METHOD OF PREPARATION Flowers, buds, leaves, seedpods raw, cooked, or pickled

Green Deane's Notes

The Eastern Redbud is one of those trees that if you don't see it at the right time, you won't notice it. I had cycled past one perhaps a hundred times, never when it was in flower. Then one day the bright-pink blossoms caught my eye.

Cercis canadensis are in the pea family, among the first trees to bloom in spring before they leaf out. They also produce large numbers of multi-seeded pods from spring to late summer, depending on location.

Eat the buds raw, pickled (a caper substitute), or fried or baked. On the flowers, the light-colored upper part is sweet, the darker lower part is bitter. Some people prefer to remove the lower part before eating. The flowers as well as young seedpods fry nicely. You can also pickle the flowers or eat them raw—they have a slightly tart taste, are a pleasant addition to salads, and can be used as a condiment. The leaves are edible raw or boiled. Branches and stems of the Eastern Redbud have been used for basketry.

Think of the plant as the First Foragers' Health Food Store. Redbud seeds are about one quarter protein (and just under one tenth fat). Both seeds and flowers are high in antioxidants—including anthocyanins, a group of red and purple pigments classified as flavonoids—as well as linoleic and alpha-linolenic acid, which are omega-3 essential fatty acids.

Elderberry

Sambucus canadensis, Sambucus racemosa

NOTABLE NUTRIENTS OR USES Vitamin A, potassium, phosphorus, calcium, vitamin C

SAFETY NOTES Avoid raw elderberries or eat only a few at a time because of risk of cyanide poisoning, which is virtually eliminated when berries are cooked or processed.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION *Sambucus canadensis*, shrub or small tree, woody stem; five-lobed white flowers in clusters, opposite, toothed leaves pinnately compound, five to nine pairs; round, glossy black berries an eighth of an inch wide. Sheds a lot of hollow stems that insects live in. Looks similar to water hemlock, but that plant produces seeds, not berries, and has raised veins. (Elderberry leaf veins are less pronounced.)

TIME OF YEAR Throughout the year in warm climes, late spring and summer where cooler

RANGE Most of North America aside from western states/provinces

ENVIRONMENT Roadsides, thickets, damp areas, low hummocks, marshes, canal banks

METHOD OF PREPARATION Cooked or used as an ingredient; eaten raw only minimally



Nutrition Notes

Berries, per 100 grams

72 calories, 0.5 g fat, 16.5 g carbohydrates, 2.6 g protein, 4.8 g fiber

Vitamin A	870 IU
Vitamin B1 (thiamine)	0.07 mg
Vitamin B2 (riboflavin)	0.01 mg
Vitamin B3 (niacin)	0.5 mg
Vitamin C	37–52 mg
Calcium	35–55 mg
Iron	1.6 mg
Magnesium	50 mg
Phosphorus	45–57 mg
Potassium	300–406 mg

Green Deane's Notes

Elderberries are almost user-friendly. You can make jam, jelly, pie, syrup, schnapps, brandy, and wine with them. The flowers are edible and can be used in pancakes and muffins or just dipped in batter and fried. They also make a nice tea. Elderflower water is used in sweets and perfumes. And, of course, the plant has a medicinal side: There is good research that elderberry reductions are antiviral.

So why did I say *almost* user-friendly? It has to do with their taste—and with the small amount of cyanide-producing glycosides that get released into your system as you digest them. Consuming excessive amounts of raw elderberries can lead to gastrointestinal upset and possibly neurologic symptoms: nausea, vomiting, abdominal cramps, dizziness, numbness—all common with cyanide poisoning.

Many folks agree that raw elderberries have an unpleasant taste, and I would generally have to agree. Their flavor can change from location to location, shrub to shrub. The ones I've grown in my yard are acceptable, but it is rare to find a delicious raw elderberry. Elderberries should be cooked or at least processed in some way, such as drying, before they are consumed. A taste of ripe fruit off the tree is fine, but if you are going to eat more than just a few (or if you're feeding them to a child), their flavor is greatly improved when they are processed or cooked—and they become safer, as it reduces the glycosides.

One study on glycoside levels in raw elderberries compared with elderberry products reported the glycosides were 44% lower in elderberry juice, 80% lower in tea, and more than 95% lower in elderberry spread and liqueur. Processing does influence nutrition, however. In the study, the higher temperatures at which the berries were made into those foods and drinks also significantly reduced the levels of phenolics, which are beneficial compounds.

I use black elderberries (*Sambucus canadensis*) in pies, though I have to mix an acid like lemon juice or vinegar with the berries. The great thing about elderberry pie is it is rare: You probably can't buy one. It's seasonal and delicious, with a texture similar to blackberry or mulberry pie. If I have enough elderberries, I make wine. I grew up with red elderberries (*Sambucus racemosa*), but we never ate them and viewed them as toxic.

Some references say red elderberries are safe to eat, some say they are not. Bradford Angier, a well-known Canada-based forager who lived off the land for years at a time, said eating a lot of raw, whole red elderberries gave him “digestive upsets.” Historical and archaeological research has indicated that Native Americans ate plenty of cooked red elderberries, but they either removed the seeds first or spit them out and then drank water to rinse their mouths. They waited until midday or later to eat red elderberry “cakes” because they could cause stomachache. And if they ate nonripe or raw red elderberries, they ate salmon afterward, believing that it prevented stomach distress.

The late University of Miami professor Julia Morton, who was *the* authority on poisonous plants, wrote that fully ripe black elderberries are not toxic and you could eat as many as you like. Dr. Morton also agreed with the centuries-old European practice of cooking young elderberry shoots like asparagus to eat.

Elm

Ulmus spp.

NOTABLE NUTRIENTS OR USES No nutritional data available; protein, oil, magnesium, lutein

SAFETY NOTES Leaves of *U. davidiana* (formerly known as *U. propinqua*) are reportedly toxic. It is found in northern China, but also used as an ornamental tree.

NATIVE STATUS Native and introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION *Ulmus parvifolia*, tall tree to 50 feet with bark that exfoliates constantly, giving it a jigsaw-puzzle look of brown, orange, and olive green. Leaves about 1 inch long, half inch wide, uneven base, rough with usually a dozen or fewer pairs of veins, dark-green on top and light green on underside

TIME OF YEAR Fruiting season depends on species; cambium and leaves are edible all year; seeds in season.

RANGE Nationwide

ENVIRONMENT Likes sunny areas and moist soil. Often found in planned landscapes.

METHOD OF PREPARATION Samaras and young leaves raw or cooked

Green Deane's Notes

Anyone with any age on them will remember the huge elm trees that once towered over many city streets in the United States. Then along came Dutch elm disease, and these giant trees disappeared. I remember their demise for two reasons: how naked many a main street looked after they were gone, and how hard elm wood was to split. We had neighbors who lost several large elms in their yard to the disease. Guess who got to split all that “free” wood for my family’s woodburning stoves in the kitchen and basement? The tall elms twisted as they grew, making splitting and sizing for the stove punishing work.

Once those great elms started to get depleted, a lot of smaller disease-resistant elms were imported from Asia. They included the Chinese elm, also called the Lacebark Elm, *Ulmus parvifolia*, which became the landscape tree of choice. It takes a nice shape, can be artistically weepy, and attractively sheds its smooth bark, leaving a mottled look that’s easy to identify. Similar in appearance but with a rough bark is the Siberian elm, *Ulmus pumila*. They fruit during different seasons: *U. pumila* in spring, *U. parvifolia* in fall. The Chinese elm is a common hedgerow and windbreak tree in the Midwest and plentiful on college campuses and in city parks because it is handsome, fast-growing, and essentially carefree.

I eat young elm leaves all the time and the seeds seasonally. The leaves can be eaten raw or boiled; they have a nice, mild flavor and are a mucilaginous

nibble. You can also boil them to eat. The prime food from elms are the seeds, contained within green “wings” called samaras, which are the tree’s fruit. They are best eaten when green: raw or added to salads or cooked dishes. Samaras are still edible, though not as palatable, when they have dried and turned brown and their wings have become papery. The inner bark of an elm is edible cooked, if you’re starving.

We don’t have a lot of specific nutritional data on the elm genus, *Ulmus*, but we know the seeds are more than 40% protein and close to 28% oil. That’s a good foraging payoff. Leaf studies show potassium and calcium content of 1–2% each. As they are green, they would have some magnesium, too, since it is at the center of the chlorophyll molecule. And they contain lutein and beta-carotene, both antioxidant carotenoids: A Chinese study on *U. pumila* found that 100 grams of leaves contains on average 1,098 mg of lutein and 298 mg beta-carotene. The inner bark contains many minerals, including calcium, manganese, iron, phosphorus, and zinc, as well as beta-carotene, vitamin C, and some B vitamins.

Evening Primrose

Oenothera biennis

NOTABLE NUTRIENTS OR USES Vitamin E, calcium, magnesium

SAFETY NOTES Try this plant carefully and sparingly. It can irritate the throat even when cooked and may be an acquired taste.

NATIVE STATUS Unclear, see below

Green Deane's Itemized Plant Profile

IDENTIFICATION Large, lemon-scented yellow flowers at top of a leafy, hairy, erect stalk that's often purple-tinged, 2–6 feet tall. Only basal rosette exists in first year, stalk grows in second year, with lance-shaped alternate leaves spiraling up stem topped by four-petaled flowers that open at night, close in the day. Seedpod splits into four parts.

TIME OF YEAR Depends on geographic location, but usually toward the end of summer or into fall

RANGE All states except Arizona, Utah, Colorado, Wyoming, and Idaho

ENVIRONMENT Fields, prairies, thickets, waste ground, disturbed sites, cultivated areas, roadsides, railroads

METHOD OF PREPARATION Boiled, steamed, raw depending on part



Nutrition Notes

Seeds, per 100 grams

Calcium	1800 mg
Copper	1.1 mg
Iron	39 mg
Magnesium	530 mg
Manganese	0.5 mg
Phosphorus	410 mg
Potassium	460 mg
Sodium	18 mg
Zinc	7 mg

Green Deane's Notes

While the edibility of *Oenothera biennis*, the Common Evening Primrose, is not in doubt, much about the plant's history is. Carl Linnaeus, who started naming plants in the mid-1700s, said it was introduced to Europe from North America in 1614. But some modern botanists say it's native to Europe and went to North America with colonists. Regardless, it was not utilized in Europe until after its discovery in North America (the same is true of maples; Europeans didn't tap their maples). By the 1880s, however, the evening primrose was a common garden vegetable in Germany.

The young, mucilaginous shoots are edible raw or cooked. They taste peppery, as do the roots, which are usually picked late in the first season and boiled for eating. Crown leaves can be blanched and put in salads; other leaves should be boiled more than once, but they are often tough and gritty. Young seedpods are typically steamed; the sweet flowers can go in salads or on plates as garnish, flower buds can be eaten raw or cooked, and second-year stalks can be peeled and eaten raw.

Evening primrose seeds, which are about 20% oil, are also edible and can remain viable in the soil for at least 70 years. Packaged and sold commercially in tablet and liquid form, the oil is high in vitamin E as well as linoleic acid (an omega-6) and gamma-linolenic acid, which may give it anticoagulant power. The plant also has phenolic acid and flavonoids, both of which are antioxidants.

Other species of evening primrose are edible, too, including *O. hookeri*'s young shoots and roots and *O. lamarckiana* shoots. The tough seedpods of *O. californica* and *O. nuttalli* and seeds of *O. brevipes* were eaten by Native Americans. *O. fruticosa* leaves were used as a potherb. *O. laciniata* is inedible, to my knowledge.

False Dandelion

Pyrrhopappus carolinianus, *Hypochoeris radicata*, *Hypochoeris glabra*, *Agoseris aurantiaca*

NOTABLE NUTRIENTS OR USES Protein; other nutritional data unavailable

SAFETY NOTES See below for preparation tips by species.

NATIVE STATUS Native and/or introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION *Pyrrhopappus carolinianus*, flower rays are sparser than those on a dandelion; dark anthers in middle area of flower. Stem thinner and stronger than a dandelion's, leaves skinnier and much less indented (they tend to curl laterally toward center).



Nutrition Notes: *Pyrrhopappus carolinianus*

Per 100 grams

calories NA, fat NA, carbohydrates NA, 9.4 g protein, fiber NA

Hypochaeris radicata and *H. glabra*, first leaves club-shaped, hairless, with round ends; mature leaves grow to 8 inches long, arranged in a basal rosette, sessile (without stalks), with toothed and deeply wavy edges, hairy for *radicata*, hairless on *glabra*. Leaves grow smaller up the stem, have a milky sap. Two to seven flowers on each leafless stalk.

Agoseris aurantiaca, perennial with basal patch of long leaves, variable in shape but 15 inches in length, no stem. Several flowers on tall peduncles up to 2 feet tall; ray florets with squared, toothed tips, deep orange to red (occasionally yellow). Seed has dandelion-like tuft attached.

TIME OF YEAR Greens spring and summer, roots in fall

RANGE *P. carolinianus* in Nebraska and to the south and east; *H. radicata* and *H. glabra* most of North America, except for the eastern High Plains; *A. aurantiaca* west of the Rockies (and oddly, most of Quebec, Canada).

ENVIRONMENT Same as dandelions—lawns, fields, sidewalk cracks, roadsides. Prefer moist soil.

METHOD OF PREPARATION Leaves raw or boiled, autumn roots boiled or roasted, flowers and buds of all can be used like dandelions.

Green Deane's Notes

Many people in my foraging classes express surprise when they learn the “dandelions” in their yard are not true dandelions. Let’s look at some dandelion pretenders. Flowers and buds can be used like dandelions, with the yellow parts eaten raw, boiled, or fried. They are also used to make wine, but only the flower petals (no green parts)

Pyrrhopappus carolinianus, or Carolina Desert Chicory, is not mentioned in any edible-plant book I have. I learned about it from the late expert forager Dick Deuerling. While ethnobotanical research shows Kiowa Indians ate

the roots, Dick preferred the leaves, raw in salads or cooked. The roots, by the way, are said to be much sweeter when picked in autumn. I eat this false dandelion just as I do the real one: young and tender leaves in a salad, older leaves boiled as a green.

A better-known and more widespread false dandelion is *Hypochaeris radicata*, also called Spotted Cat's Ear, Hairy Cat's Ear, flatweed, or some variant of "cat's ear." The leaves are hairy and bitter. Cooking only reduces, but does not eliminate, the bitterness, so *H. radicata* is not for all tastes. But if you're OK with it, the leaves can go raw in salads, be cooked in soups, or steamed. *Hypochaeris glabra*, another false dandelion, is less bitter and often eaten raw. Its leaves are hairless—the plant's common name is Smooth Cat's Ear.

Agoseris aurantiaca, a false dandelion also known as the Mountain Dandelion or Orange Agoseris, is one of several members of the *Agoseris* genus that were consumed by Native Americans. They ate *A. aurantiaca*'s leaves; chewed the sap of *A. glauca* as gum; and took all above-ground parts from *A. retrorsa*, boiled them, rinsed them in cold water, then fried them in grease.

False Hawk's-Beard

Crepis japonica, aka *Youngia japonica*

NOTABLE NUTRIENTS OR USES No nutritional data available; phenolic compounds, tannins, antioxidants

SAFETY NOTES No known safety issues, but see below for preparation tips.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Disk flower resembling a dandelion, no bigger than a dime; leaves oblong, soft, wrinkled and curly, often tinged red on edge; stem round, fuzzy, skinny, up to 2 feet; seeds look like miniature dandelion puff, several on one stem; vertical taproot

TIME OF YEAR Springtime, can persist into warmer months in southern states and again in the fall through winter; it prefers the cooler months.

RANGE Native to East Asia, but now found around the world

ENVIRONMENT Moist, sunny or semi-shaded areas; sandy to rich soil; likes grassy areas and unmaintained lawns

METHOD OF PREPARATION Young leaves raw or boiled

Green Deane's Notes

Crepis japonica, aka *Youngia japonica*, gets no respect. When I first wrote about this species, you couldn't find it in any field guides on edible plants, and there was very little of substance about it on the internet.

It deserves more attention: Research shows the plant has anticancer and antiviral properties. In a study published in the *Journal of Ethnopharmacology* in 2004, hot-water extract of *Youngia japonica* inhibited the growth and proliferation of cancer cells. The report also said the plant probably got its antiviral power from phenolic substances, including tannins. Another study, cited in the journal *Photochemical & Photobiological Sciences* in 2017, referred to its antioxidant, antiallergenic, antiviral, and antitumor properties as well as its nutritional value. Specific information on its nutrition is rare, but we know it contains magnesium. When you consider that young *Youngia* also tastes good, it's a win-win.

While you can eat the young leaves raw, they are better cooked as a potherb—boil for 10 minutes or longer. The taste is very mild. I have a friend from Croatia who washes off the entire plant, then cooks and eats it all: leaves, blossoms, stem, and roots.

A plant having two scientific names, as this one does, is quite common. It's native to Japan, which probably accounts for the *japonica* half of the name (though there are other theories); the genus name is *Youngia* is unknown, but it might be for Thomas Young, a British intellectual who made contributions to science, language, music, and Egyptology and is nicknamed “the last man who knew everything.” Young died in 1829,

however, and the plant was named in 1838. It picked up the other genus name, *Crepis*, in 1861.

Ancient Greek philosopher Theophrastus mentioned a plant by the name *Crepis* some 2,300 years ago, and Pliny did 400 years later in Rome. But English-speaking botanists say they don't know why the genus was named *Crepis*. The most convincing of the possibilities begins with the Greek word "krepis," which was a textured light cloth used in making veils. From there, it went into Latin as "crispus" or "crisp," meaning curled and wrinkled (which led to our "crepe paper"). Indeed, the leaves of *C. japonica* and its genus mates are curled and wrinkled.

Other edible *Crepis* in North America include *Crepis bursifolia*, Italian Hawk's-Beard; *Crepis capillaris*, Smooth Hawk's-Beard; *Crepis glauca* or *Crepis runcinata*, Fiddlehead Hawk's-Beard; *Crepis setosa*, Bristly Hawk's-Beard; *Crepis tectorum*, Narrow-Leaf Hawk's-Beard; and *Crepis vesicaria*, Beaked Hawk's-Beard. There's little variation among the species, except maybe in bitterness.

Feijoa (Pineapple Guava)

Feijoa sellowiana

NOTABLE NUTRIENTS OR USES Vitamin C, potassium, calcium, magnesium

SAFETY NOTES See below for preparation tips.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen shrub to 15 feet. Oval green fruit not quite the size of an egg. Leaves glossy and dark green, underside fuzzy and silver.

TIME OF YEAR Fruit from late August to mid-October, depending on year and location

RANGE Native to South America, but introduced to southern Europe, as well as California; a common park tree elsewhere

ENVIRONMENT Anywhere temperature doesn't fall below 15°F, but preferably drier climates with mild winters and moderate summers. Well-drained soil; is drought tolerant and quite carefree.

METHOD OF PREPARATION Raw, cooked, or as ingredient

Nutrition Notes

Per 100 grams

61 calories, 0.42 g fat, 15.21 g carbohydrates, 0.71 g protein, 6.4 g fiber

Vitamin A	6 IU
Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.02 mg
Vitamin B3 (niacin)	0.29 mg
Vitamin B5 (pantothenic acid)	0.23 mg
Vitamin B6 (pyridoxine)	0.07 mg
Vitamin C	32.9 mg
Vitamin E	0.16 mg
Vitamin K	3.5 mcg
Calcium	17 mg
Copper	0.04 mg
Iron	0.14 mg
Magnesium	9 mg
Manganese	0.08 mg
Phosphorus	19 mg
Potassium	172 mg
Sodium	3 mg
Zinc	0.06 mg
Beta-carotene	2 mcg
Lutein and zeaxanthin	27 mcg
Lycopene	5 mcg

Green Deane's Notes

Acca sellowiana is now the official botanical name for feijoa, or pineapple guava, but *Feijoa sellowiana* is used more. Feijoa is becoming a popular ornamental, but it has never taken off with backyard fruit growers and gardeners. It's an attractive, compact tree that can be trained into a hedge, planted in a container, or espaliered (grown against a wall or trellis), and deer won't eat it, which can be a plus in some yards. Human foragers like

the plant, as both the fruit and flowers are edible. There is a bit of pineapple in the fruit's flavor if you use your imagination. The flowers are sweet—to some palates, a bit spicy, like cinnamon.

In appearance, the blossoms might remind you of some cactus blossoms. The fruit is unusual in that it never changes color over the course of its life. Even when the fruit drops from the tree and dehydrates, it stays green. (This may be to thwart critters drawn to bright colors.) And just for the record, the pineapple guava is not a “true” guava.

I eat the entire fruit, including the soft seeds. The key is testing the fruit: It's ready to eat when there is some give, not when it's rock-hard. Some people peel Feijoa, but as they are small, that's a bit of a chore. The fruit has a slightly gritty texture near the skin. You can cook (roast, boil, etc.) the fruit, make wine or chutney with it, or blended it into drinks. The blossoms are edible after they open.

Fiddlehead Fern

Pteridium aquilinum, Osmunda cinnamomea

NOTABLE NUTRIENTS OR USES Protein, carbohydrates, fiber, potassium, calcium

SAFETY NOTES Toxic to horses. Can expose humans to risk of throat or stomach cancer or thiamine/vitamin B1 deficiency (see below for more information). Do not eat regularly or can/store fiddleheads.

NATIVE STATUS Native



Nutrition Notes

Per 100 grams

180 calories, 1.83 g fat, 20.33 g carbohydrates, 20.45 g protein, 21.45 g fiber

Vitamin B2 (riboflavin)	0.41 mg
Calcium	194 mg
Iron	9.4 mg
Potassium	1219 mg
Sodium	23.8 mg
Zinc	5.6 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Pteridium aquilinum*, Bracken Fern: Large fern with three-part form on a tall stalk. Leaves horizontal, broad, triangle-shaped; leaflets opposite, lower two larger and twice-divided, upper ones usually once-divided; spores in linear strips under leaves, near edges.

Osmunda cinnamomea: Clumps to three feet tall, separate spore-bearing, stiff, fertile fronds quick to turn brown, fiddleheads grow from the base unfurling into large, erect, pinnately-compound, yellowish-green, fronds to 6 feet long. Young fiddleheads covered with brown fuzz.

TIME OF YEAR Spring, but in some climates constantly

RANGE native to North America; introduced widely

ENVIRONMENT Woodlands; well-drained soil that holds water

METHOD OF PREPARATION Boil or steam

Green Deane's Notes

What if I smoke one cigarette every April first for 40 years? What are the chances those 40 cigarettes will have a significant effect on my health? What illness from long-term exposure might I get? What if I smoke 7 cigarettes the first week in April but only for that first week, for 40 years? That would be 280 cigarettes, which is what the average smoker smokes in 20 days. What if I smoke 30 cigarettes every April, but only 30 cigarettes and only in April? That's 1,200 cigarettes, or 85 days' worth of average smoking.

How is this relevant? Fiddleheads are a damned-if-you-don't, damned-if-you-do topic. Long-term consumption of fiddleheads may increase your chances of esophageal or other cancer. On the other hand, humanity has been eating fiddleheads of the Bracken Fern (*Pteridium aquilinum* (ter-ID-ee-um ak-wee-LIE-num) since prehistory. Modern science suggests we

shouldn't have. Long-term consumption of some fiddleheads can raise your risk of esophageal or gastric cancer. Just residing where they grow can too.

Before I let empiricism rain on this foraging parade, let me relate how fiddlehead greens were a rite of spring where I grew up in Maine. It was one of two things everyone talked about, the other being when was "ice out" in Sebago Lake. Contests were held as to the exact day, minute, and second the lake center would be free of ice. (Maine's lakes are glacier-formed and very deep; if you go into the water in the summer—both days of it—you could get heatstroke from the neck up and freeze your feet off down below.) As a topic of interest, the melting of the ice in Sebago—the largest lake in southern Maine—was second only to the coming of fiddleheads. As the snow melted and warm days came around, fiddlehead greens were the *talk de spring*.

In New England, some families may dedicate several weeks to the harvest, cooking, and canning of fiddleheads. One Yankee sign of friendship is giving someone a jar of fiddlehead greens long after the season has passed. My stepfather adored fiddleheads, my mother did not. She thought them slimy. He lived to 86 and she 88 (and both smoked heavily). I know a family that cannot can enough fiddleheads, have been canning them for decades, and are still here ... which leads to the intrusion of science.

Animals such as cattle and rodents, which cannot boil fiddleheads before eating, could get cancer from them. They are also toxic to horses over time if fed in the hay. In areas where a lot of *P. aquilinum* grows, a chemical it produces called ptaquiloside can leach into the water supply. There has been a reported increase of stomach and throat cancers in people who live in those areas even if they don't eat fiddleheads.

Boiling the ferns—that is, cooking them *thoroughly*—takes care of the problem, or lessens it to an acceptable risk level. Fiddleheads come in great amounts only in the springtime, and eating them in season may be hormetic.

That refers to something beneficial to your health in smaller amounts but dangerous in higher doses. Clearly, moderation is wise: Canning the fiddleheads, letting them sit in that canning liquid, and eating them all year might not be the best practice. I think nearly everything causes cancer, so I'm willing to risk a few fiddleheads with butter once or twice a spring—which is about as often as I can collect enough. Another health risk associated with eating fiddleheads is lowering your thiamine level, which could inch you toward beriberi, a thiamine deficiency disease.

Pick only fiddleheads under 2 inches for eating. Remove any yellow or brown skin, and boil them twice for 10 minutes each time (or steam for 20 minutes), with a change of water between boilings. Gourmets spread a thin layer of fiddleheads in a steam basket and steam until just tender-crisp. Besides the *P. aquilinum*, and *Osmunda cinnamomea* (cinnamon fern), other ferns with edible fiddleheads are *Matteuccia struthiopteris* (ostrich fern), *Onoclea sensibilis* (sensitive fern), *Acrostichum aureum* (Golden Leather Fern), and *Acrostichum Danaeifolium* (Inland Leather Fern). Beyond the fiddleheads themselves, the roots of *P. aquilinum* have been used to brew beer, the root starch used as thickener. Bread can be made out of dried and powdered roots, either by themselves or mixed with flour.

Fiddlehead ferns used for tea in North America include *Adiantum capillus-veneris* (Common Maidenhair); *Adiantum pedatum* (Northern Maidenhair); *Pellaea mucronata* and *Pellaea ornithopus*, two types of Cliff Brake; and the Sword or Holly Fern, *Polystichum munitum*. Licorice Ferns, *Polypodium glycyrrhiza* and *Polypodium vulgare*, have usable roots. Also edible is the fiddlehead of the Giant Leather Fern (*Acrostichum danaeifolium*). Unless you live in a desert or on constant ice, there is a fiddlehead-producing fern near you. The town of Tide Head, New Brunswick, bills itself as the Fiddlehead Capital of the World. Its human population is under 1,000.

Fir

Abies balsamea, *Abies concolor*

NOTABLE NUTRIENTS OR USES Vitamin C, potassium

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Nutrition Notes

Needles, per 100 grams

Balsam Fir: 11.8 g fat, 8.8 g protein, 21.7 g fiber; White Fir: 4.1 g protein

Vitamin C	243 mg (Balsam)
Calcium	75 mg (Balsam), 197 mg (White)
Copper	< 0.1 mg (Balsam)
Iron	1.2 mg (Balsam), 1 mg (White)
Magnesium	13 mg (Balsam), 65.8 mg (White)
Manganese	8.6 mg (Balsam), 1 mg (White)
Phosphorus	13 mg (Balsam), 70 mg (White)
Potassium	46 mg (Balsam), 577 mg (White)
Zinc	0.5 mg (Balsam)
Chloride	1.5 mg (Balsam)

Green Deane's Itemized Plant Profile

IDENTIFICATION *Abies balsamea*, small to medium-size evergreen (to about 60 feet) with narrow top. Young bark gray and smooth, with pockets of resin; old bark rough or scaly. Needles flat, arranged spirally, growing shorter and thicker farther up tree, usually longest in middle of the twig, underside lighter in color with some white lines. Cones up to 3 inches long, erect, dark purple ripening to brown by fall. *A. concolor*, large evergreen (to 200 feet or more), upper branches curl up, lower branches curl down. Young bark gray and smooth, with pockets of resin; old bark rough or scaly. Needles flat, notched at end, spirally arranged. Cones up to 6 inches long, slightly barrel-shaped, dark purple ripening to brown by fall.

TIME OF YEAR Needles anytime; inner bark anytime, though spring is better; cones for seeds around September

RANGE the Americas (species vary by range)

ENVIRONMENT *A. balsamea*, cool temperatures, abundant moisture, doesn't like high altitudes, not picky about soil or acid range. *A. concolor*, moderately humid climates with long winters, moderate-to-heavy snowpacks, short growing seasons, can tolerate shade and high elevation.

METHOD OF PREPARATION Inner bark, pitch, shoots right off tree; needles in tea; cones dried and powdered

Green Deane's Notes

One has to wonder how humans ever learned to eat parts of fir trees and other conifers. Hunger? Sickness? Desperation? Chance? People who study such things say there is no one aha moment. They say different groups learned a little at a time and what they learned got passed on or around until working knowledge accumulated. This is how humans learned to ferment

and to leach toxic roots or salt-cure otherwise inedible olives. Perhaps it's that way with the fir.

On both *Abies balsamera* (balsam fir) and *Abies concolor* (white fir), the inner bark and shoots are edible. So are the hard pitch and pitch blisters, though they'd stick to your teeth for a while. Tea can be made from the needles; cones can be dried and powdered, mixed with sugar and/or fat, and stored or consumed.

Firs are the northern material of choice for Christmas wreaths. The fir was always our Christmas tree as well. To the north and northwest of our house were more than 200 acres of woods, so one could be choosy and shop around. I'd go looking a couple of weeks before Christmas, taking an ax, a rope to pull the tree with, and a dog or two or three. I always picked a small, young fir that would fit in the house floor to ceiling. Our neighbor, preferring a perfect shape, would cut the top off an older, larger tree. Back then, there was snow on the ground at Thanksgiving and Christmas. By the 1970s, though, white Christmases were becoming iffy. And as I basically grew up in a barn, the Christmas tree usually didn't come down until around my parents' birthdays in mid-March.

Maine-made pillows filled with aromatic fir needles are still sold, as is fir incense. And there's one other use: making a weather stick. You mount a small branch of peeled fir on the front door outside. If it curls up, fair weather is coming; down, rainy weather is on the way.

Firethorn

Pyracantha coccinea

NOTABLE NUTRIENTS OR USES Vitamin C, lycopene, beta-carotene

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced



Nutrition Notes

Extract, per gram

Vitamin C	18 mg
Beta-carotene	5 mg
Lycopene	17 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Thorny evergreen shrub with serrated leaf margins; white flowers; and red, orange, or yellow berries

TIME OF YEAR Flowers come out in late spring and early summer in northern states, spring in warmer climates; berries start developing late summer and

mature late autumn in north, fall farther south, or continuously throughout the year.

RANGE Native to Europe and Asia, an intentional ornamental elsewhere

ENVIRONMENT Not particular about soil, prefers full sun but will grow in partial shade

METHOD OF PREPARATION Berries made into jelly, sauce, marmalade, wine, extender

Green Deane's Notes

For a few weeks each year, the moderately drab *Pyracantha coccinea* is showy, if not stunning, with brilliantly red berries. They give it its common name, Scarlet Firethorn. I had the pleasure of staying in Savannah, Georgia, for a few days in early December one year. The firethorns along the waterfront were eye-catching—and created a natural fence.

The thorny shrub will live in a pot or spread out as an espalier across a wall. It's common in landscaping. Decades ago when I first saw the lanky plant, I was told it was poisonous. "All red berries are poisonous," somebody told me, in a familiar but untrue refrain. It's not true for black berries, either. These sayings are almost always wrong but one. For practical purposes, all white berries are toxic. The few edible white berries are extremely uncommon or, in the case of the thatch palm, have unremarkable flavor.

According to research, firethorn has a lot of the chemical forms that are made into various antioxidants, such as lycopene, beta-carotene, fatty acids, and phenolic compounds. It's high in vitamin C too. You can eat firethorn fruit off the tree, but the pulp is mealy and the seeds basically inedible. It makes a good jelly or sauce, and I once found a firethorn wine recipe in a rather august wine technology book.

The berries of the firethorn are actually pomes, fleshy fruit with seeds at the core, like apples. Blackbirds and cedar waxwings have been known to strip a tree of all its berries. To the human palate, the berries are soft and mealy—like an apple that should have been eaten last week. They're mild-flavored and have many seeds, which are shaped like tiny angular Brazil nuts. As a general rule, don't eat the seeds, just as you wouldn't eat apple seeds. Some people consider the berries bitter, but that has not been my experience. They may be slightly astringent, though. Like many berries, they don't keep well. If making jam or jelly out of the fruit, you can strain out the seeds after cooking.

Fireweed

Chamerion angustifolium

NOTABLE NUTRIENTS OR USES Calcium, phosphorus, magnesium, zinc, sodium

SAFETY NOTES See preparation notes below.

NATIVE STATUS Native



Nutrition Notes

Shoots, per 100 grams

30 calories, 0.4 g fat, 6.4 g carbohydrates, 0.3 g protein, 0.8 g fiber

Calcium	32 mg
Copper	700 mcg
Iron	0.5 mg
Magnesium	20 mg
Manganese	0.18 mg
Phosphorus	31 mg
Sodium	0.6 mg
Zinc	0.7 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Spikes of red, pink, or white four-petaled flowers; bloom begins in the middle of the stem, which can grow to 6 feet tall. Leaves are pinnately veined and willow-like; seeds in pods.

TIME OF YEAR Shoots and stems in spring

RANGE Nationwide except Texas and the Southeast

ENVIRONMENT Disturbed ground, such as where logging or fire occurs; woodland borders; meadows; roadsides

METHOD OF PREPARATION Shoots raw or cooked, young stems and leaves steamed or boiled, leaves made into tea

Green Deane's Notes

You might confuse fireweed and Burnweed, both edible plants, because of their names, but you wouldn't when seeing them. Fireweed is showy, a tall wildflower with colorful blossoms; on Burnweed (see separate entry), the greenish flowers barely open.

This species is called fireweed because it's ruderal; that is, it takes advantage of burned ground or waste ground and then sprouts. When

London was bombed during World War II, fireweed was one of the first flowers to emerge in the rubble. It was also the first blossom to appear after Mount St. Helens blew her top in Washington State in 1980.

A member of the evening primrose family, fireweed was changed from one genus, *Epilobium*, to another, *Chamerion*—as were many other plants once DNA testing told us botanists got a lot wrong. *Chamerion* comes from two Greek words, *chamai* and *nerion*, which together mean “dwarf oleander.” (Fireweed’s leaf shape is like the oleander’s.) That seems a waste of name space, as *angustifolium* means “narrow leaf.”

Steaming or boiling works for cooking fireweed’s shoots and young stems and leaves. The shoots can be eaten raw, too, and you could make tea from older leaves. Older stalks should be peeled. The seeds are inedible.

Flowering Rush

Butomus umbellatus

NOTABLE NUTRIENTS OR USES No nutritional data available; starch, protein, fat

SAFETY NOTES See preparation information below.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Flowering aquatic plant to 5 feet tall that grows in two rows from rhizomes. Resembles the bulrush when not flowering but without tuft of seeds. Leaves are thin, straight, sword-shaped, pointed, up to 40 inches long, untoothed, parallel-veined. Flowers grow on tall, cylindrical stalks in umbrella-like clusters of 20–50. Each has three large pale-pink or white petals and three lower, smaller sepals of same color. Blossoms have six pistils that are simple, whorled, united at the base. Fruit is a many-seeded capsule. Base of flower stalk can have bulbils (tiny bulbs) and rhizome rootlets.

TIME OF YEAR Flowers from June to September

RANGE Northern half of the US

ENVIRONMENT Mud, ponds, canals, ditches, edges of still or slowly moving water no more than 10 feet deep. Will not grow in shade.

METHOD OF PREPARATION Roots boiled, roasted, or dried for grinding; don't eat roots raw.

Green Deane's Notes

Let's start with the fact that the flowering rush—also called the Water Gladiolus—is not a rush. Botanists have had a hard time classifying the flowering rush because it's monotypic, the only member of its genus. When in doubt, botanists make a plant monotypic. With this one, there is debate about whether that's accurate: Some argue the North American version has subtle differences from the plant found in Eurasia, so they should be two species, *Butomus umbellatus* and *Butomus junceus*; others say the differences don't exist.

While the flowering rush used to be a common food in Russia, where food was scarce, in the contemporary world it is considered an awful invasive. Moving water, ice, humans, and muskrats help spread the plant, the latter because they build their mounds with it and eat it in winter.

The roots (rhizomes) of the flowering rush are 60% starch. Five kilos (11 pounds) of dried roots will produce about one kilo (2.2 pounds) of flour. To make it, start by removing the bulbils and rootlets, then peeling the rhizomes. They can be boiled—changing water helps—or roasted or dried before being ground. Make sure the roots are not acrid after drying or roasting. The ground roots can be used as a thickener or added to flour. We have scant nutritional data on the plant besides its high starch content, though it's reportedly 14% protein and 4% fat.

Forsythia

Forsythia spp.

NOTABLE NUTRIENTS OR USES No nutritional data available; antioxidants

SAFETY NOTES Exercise caution with the leaves. They should be eaten only when very young and may contain unhealthy substances.

NATIVE STATUS Introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION A shrub to 8 feet high eventually turning woody with gray bark. Dense foliage. Narrow, dark-green leaves with lighter undersides, in opposite pairs, with serrated margin; one to three yellow flowers per node, each with four narrow petals at right angles, forming a short tube. Flowers appear on naked branches before leaves come out for the season.

TIME OF YEAR Spring

RANGE Native to Asia and southeastern Europe, cultivated elsewhere.

ENVIRONMENT Sunny, well-drained soil; may need extra watering in dry spells

METHOD OF PREPARATION Blossoms raw and, less commonly, cooked



Green Deane's Notes

Despite the forsythia being a very common ornamental that has liberated itself into a weed and despite it having a large number of golden-leaved varieties, there is nothing about it as an edible plant in my entire library of 130 books plus papers, DVDs, and more. Yet the blossoms *are* edible, albeit slightly bitter. They add color to salads and are a cheery garnish. The leaves are also edible when very young, raw or cooked in soup. Considering some suspicions about substances such as glycosides in Forsythia leaves, sticking with just the blossoms in a seasonal salad seems wise.

Gardeners have a love/hate relationship with the forsythia. For two weeks every year it is the darling wherever it grows—a seasonal flame of yellow. It's rather boring for the other 50 weeks. There is an annual Forsythia Festival the second week in March in Forsyth, Georgia, about an hour south of Atlanta. If the weather is bad, the festival goes on anyway. Forsythias wait for no one.

The forsythia was introduced to the rest of the world from its native China by Scotsman Robert Fortune, a (in)famous plant hunter (see entry for chocolate vine). There are about a dozen species of forsythia, depending on who's counting and whether you include hybrids, and also many cultivars, including dwarf and compact forms.

Several studies of water and alcohol extracts and essential oil from such *Forsythia* species as *F. koreana*, *F. suspensa*, and *F. viridissima* showed antibacterial and antioxidant activity. One report even said forsythia flowers could be a natural source for antioxidative additives used in commercially packaged food. Other research, involving a water extract from *F. suspensa*, found it might be effective in treating postmenopausal osteoporosis, which might suggest it has vitamin K2, from some natural fermentation.

F. suspensa, the weeping forsythia, has been an important herb in Chinese medicine for millennia. Its unripe yellow fruit and seeds are ground together to make “lian qiao,” which is taken for chills, fevers, and headaches and applied externally on burns, infections, and rashes. Lab tests have shown the seeds to be anti-inflammatory and antioxidant, though an early-1990s study of 102 raw pharmaceuticals used in traditional Chinese medicine suggested lian qiao might be carcinogenic. Forsythia extracts are used in commercial products to treat dandruff, acne, and athlete’s foot. The Chinese also make a detox tea with forsythia: Wuzhou King Three Coins Kangshou. One serving has 40 calories, 15 grams of carbohydrates, 10 mg of sodium, and 2% of your daily need of iron.

Fuchsia

Fuchsia spp.

NOTABLE NUTRIENTS OR USES Potassium, calcium, phosphorus, magnesium, sodium

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen or deciduous shrub or small tree. Leaves opposite or in whorls of three to five, simple, lanceolate, usually with serrated margins (no teeth in some species). Flowers pendulous, teardrop-shaped, with four long, slender sepals and four shorter, broader petals. Bright-red sepals and purple petals in many species, but colors could be white, yellow, orange, dark red, or purple-blue in other species. Fruit small, reddish or purple, with many small seeds.

TIME OF YEAR Flowers in profusion throughout summer and fall in temperate climates, all year for tropical species

RANGE South America, Central America, Mexico, New Zealand to Tahiti

ENVIRONMENT Varies with species, from shade to full sun. Prefer heavy fertilization and soil that's neither wet nor dry.

METHOD OF PREPARATION Raw



Nutrition Notes: *Fuchsia hybrida*

Flowers, per 100 grams

Calcium	23.9 mg
Copper	0.27 mg
Iron	0.81 mg
Magnesium	17 mg
Manganese	0.41 mg
Phosphorus	21.54 mg
Potassium	196 mg
Sodium	12.5 mg
Zinc	1.14 mg

Green Deane's Notes

Mention fuchsia, and most people will think of a bright pink color rather than a plant. Yet this shrub is employed everywhere in landscaping and grows easily in containers and hanging baskets. There are now believed to be more than 100 species of fuchsia worldwide.

A lot of people like fuchsia. There is an American Fuchsia Society, an online Fuchsia Forum, and dozens of local fuchsia-inspired groups. They discuss just about everything you could possibly want to know about the

fuchsia—except recipes. Apparently, eating the plant is verboten in many circles. But both its fruit and flower are edible. The fruit can be eaten right off the tree: It has a subtle grape flavor with traces of black pepper. If your fuchsia fruit tastes pleasant, use it as you would most fruit, perhaps in preserves, sauces, or pies. Blossoms are edible raw.

Fuchsia was named in honor of German physician cum botanist Leonhart Fuchs by the French monk and botanist Charles Plumier, who “discovered” the plant around 1700 on the island of Hispaniola. (The genus containing frangipanis, *Plumeria*, is named for him.) Plumier, botanist to King Louis XIV of France, was one of the most important botanical explorers of his time, making three trips to the West Indies and bringing knowledge of hundreds of plants to the Old World. As for Fuchs, he was long gone before Plumier was braving the Caribbean jungles. In the mid-1500s, Fuchs had founded one of the first German botanical gardens and produced an herbal guide, along with 50 or so other books he wrote. Thankfully, the word *fuchsia* shifted from the hard German pronunciation of his surname.

Garlic Mustard

Alliaria petiolata

NOTABLE NUTRIENTS OR USES Potassium, magnesium, vitamin C, calcium, carotenoids

SAFETY NOTES Toxic to some insects and fungi due to cyanide in leaves, at levels not dangerous to humans

NATIVE STATUS Often considered among the worst invasive species

Green Deane's Itemized Plant Profile

IDENTIFICATION Biennial herb 1–3 feet high its second year, usually tallest bloom plant in the forest in spring. First-year basal rosette of three or four leaves; alternate leaves on one or two flowering, purplish stems in second year. Leaves dark green, round, scallop-edged, toothed. Leaves and stems smell like onion, garlic, or mustard when crushed. Numerous small, white four-petal flowers. Slender seed capsules to 6 inches long, shiny black when mature, with a single row of 12–19 oblong black seeds. White, thin taproot that smells like horseradish, S-shaped at the top. Plants that grow near garlic mustard and might be confused with it include toothworts (*Dentaria*), sweet cicely (*Osmorhiza claytonii*), and early saxifrage (*Saxifraga virginensis*).

TIME OF YEAR Spring, summer

RANGE Non-southern states

ENVIRONMENT Moist, shaded soil; river floodplains, forests, roadsides, edges of woods or trails, forest openings, disturbed areas. Does not tolerate highly acidic soil. Often found in association with hardwoods but not under conifers.

METHOD OF PREPARATION Young shoots raw; older parts can be too strong to eat raw for most; boiled, or used for flavoring



Green Deane's Notes

This plant is called garlic mustard—and occasionally Jack-by-the-hedge or sauce alone—but it's not an *Allium*, the genus containing garlic, or *Brassica*, the mustards genus. It does taste like a garlicky mustard, however. It is loathed by many governmental agencies as an invasive species but is a darling of foragers. And it's quite nutritious, including 13.3 mg of carotenoids (antioxidant pigments) per 100 grams of fresh leaves.

Nutrition Notes

Per 100 grams

0.53 g fat, 8.1 g carbohydrates, 8.57 g protein, 5.38 g fiber

Vitamin C	261–378 mg
Calcium	200 mg
Iron	3.2 mg
Magnesium	121 mg
Phosphorus	118 mg
Potassium	721 mg
Sodium	34 mg

I tell folks to gather garlic mustard now for pesto or it may disappear presto. Well, maybe not immediately, but it could eventually become hard to find or extinct in North America. The University of Minnesota began looking for a biological control of the plant in the 1990s. Several insect candidates were considered, and the university decided on the *Ceutorhynchus scrobicollis* weevil. But release of the bug has been blocked by the United States Department of Agriculture.

Garlic mustard began to proliferate alarmingly in the 1960s. It went from taking over an estimated 141 square miles a year to more than 2,470. In recent decades it's become a significant pest, a dreaded "invasive." My best guess why is deer, which prefer to eat native plants rather than garlic mustard (they also don't like begonias, marigolds, feijoa, among other plants). The deer population has dramatically increased during the same time. So you have more deer eating the native plants to the ground, thus giving prolific Garlic mustard a chance and space to get going. Once it does, it drives out other plants and trees. Each garlic mustard plant can produce up to 8,000 seeds. That can translate to 260,000 seeds per square mile. The seeds are easily spread around and can remain viable for up to 10 years. Garlic mustard is simply outbreeding its deer-devoured competitors.

Now there is another problem associated with garlic mustard: It has cyanide in its leaves. Detectable yet minimal amounts of cyanide are not that uncommon in Brassicaceae, the family of vegetables that includes garlic mustard as well as broccoli, brussels sprouts, and kale. It's not enough cyanide to impact people or animals, but it is enough to be toxic to some insects, fungi, and pathogens. That might be how garlic mustard keeps other plants from growing nearby: by killing off soil bacteria those plants need.

As for its nonthreat to humans, garlic mustard is not mentioned in *Poisonous Plants of the United States and Canada* by John M. Kingsbury, a definitive reference book. It also has a lower oxalic acid threat than commercial spinach. If you go through a patch of garlic mustard, clean your shoes and pants cuffs afterward so you don't bring home this species that can easily take over your yard.

Of course, eating the invasive is your civic duty—and tasty too. Second-year shoots before blossoming are choice, eaten raw. The leaves wilt quickly, so pick them just before using. They should be finely chopped and then tossed in a salad, cooked as a potherb, or eaten raw with bread and butter. Older parts of the plant will have stronger flavor, and they are best served cooked. Garlic mustard leaves also can be used in stuffing or mixed with mint leaves and made into a sauce for lamb, mutton, or salt fish. The seeds make a fiery mustard.

Ghost Pipe

Monotropa uniflora

NOTABLE NUTRIENTS OR USES No nutritional data available

SAFETY NOTES See details below about a toxic lookalike; also note that this is decidedly a survival food.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Translucent, ghostly white (sometimes pale pinkish) plant 4–12 inches high. Leaves look like longish fish scales and are flecked with black on flower stalk (peduncle). Stem bears a single flower that grows pointing down, spreading almost perpendicular to stem as anthers and stigma mature, and then becoming erect as fruit capsule matures. Fruit releases ripe seeds through slits that open from tip to base of the capsule.



TIME OF YEAR Flowers from early summer to early autumn

RANGE All states except those in Southwest, intermountain West, and the central Rocky Mountains

ENVIRONMENT Mature, moist, shaded forests with thick leaf litter

METHOD OF PREPARATION Parboiled, then roasted or boiled

Green Deane's Notes

The genus *Monotropa* used to have two members, *M. uniflora* and *M. hypopitys*, but the latter had a name change to *Hypopitys lanuginosa*, leaving *Monotropa* as a monotypic genus.

Most references to *M. uniflora*, aka Ghost Pipe or Indian pipe, are medicinal, but in *Edible Wild Plants of Eastern North America*, Merritt Fernald mentioned them as edible—barely. “The only person who has reported upon it is Prest, who states that the fresh plant is almost tasteless but that when parboiled and then boiled or roasted it is ‘comparable to asparagus.’ Our own single experiment was not gratifying in its result,” wrote Fernald, referencing an earlier report by W. H. Prest, a fellow of the Nova Scotian Institute of Science.

Calling Ghost Pipe “comparable to asparagus” does not make it so, and a lot of people think it should never be on any menu. The chlorophyll-less plant is waxy white and lives off fungi that get their energy from trees. I’d have to be really hungry to eat *M. uniflora*, and I’d be wary at any time of its former genus mate, *Hypopitys lanuginosa* (also called Pinesap), which contains toxic substances called glucosides. *H. lanuginosa* has the same growth pattern as *M. uniflora*, but instead of white it is yellow or gold, and it’s hairless in summer, red and hairy in the fall.

Ginkgo

Ginkgo biloba

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, vitamin A, vitamin C, magnesium

SAFETY NOTES Do not touch fruit with bare hands. Seeds are toxic when raw. Avoid cooked seeds if you have a vitamin B6 deficiency. Everyone else should limit intake (see details below).

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Large shade tree to 120 feet. Long horizontal branches creating a pyramidal crown. Leaves leathery, fan-shaped, 1.5 inches long and 3 inches wide, parallel veins radiating from stem point. Female flowers single or in pairs, male flowers in catkins. Orange-yellow fruit similar in shape and size to cherry, fetid-smelling.

TIME OF YEAR Autumn, when fruit is ready to drop

RANGE Native to Asia, now cultivated in temperate regions

ENVIRONMENT Full sun; prefers moist, deep, sandy soil; won't grow well in subtropical climes. A popular planting in cities and parks and on college campuses and residential estates.

METHOD OF PREPARATION Roast seeds or shell and boil them.

Nutrition Notes

Dried seeds, per ounce

98.7 calories, 20.05 g carbohydrates, 2.93 g protein

Vitamin A	309 IU
Vitamin B1 (thiamine)	0.12 mg
Vitamin B2 (riboflavin)	0.05 mg
Vitamin B3 (niacin)	3.33 mg
Vitamin C	8.31 mg
Calcium	5.67 mg
Copper	0.15 mg
Iron	0.454 mg
Magnesium	15 mg
Manganese	0.06 mg
Phosphorus	76.3 mg
Potassium	283 mg
Sodium	3 mg
Zinc	0.19 mg

Green Deane's Notes

The first ginkgo tree I saw was at the University of Maine at Gorham (now the University of Southern Maine). It stood outside of Bailey Hall, which was then the school's main classroom building. It struck me as odd to see a ginkgo there, as Maine is a frigid state and I always associated ginkgo trees with southeast Asia (at the time Vietnam was on everyone's mind). The ginkgo is actually a temperate forest tree that can tolerate warm climates.

Some people think that even though ginkgo seeds are edible, we should not eat them. So let's start with the warnings. Raw ginkgo seeds are mildly toxic and should not be consumed at all. Anybody with a vitamin B6 deficiency should not eat cooked ginkgo seeds; the seeds contain a chemical, 4-methoxypyridoxine, that is anti-vitamin B6. Others should limit daily consumption to 10 cooked seeds (five for children under age 6), and no one should eat them every day.

Another warning has to do with touching, not eating, the plant. The ginkgo's fruit has some urushiol, the chemical complex in poison ivy, so wear gloves when handling them or you could get contact dermatitis. Harvesting ginkgo seeds is a lot of work—not as much as acorns, yet still time-consuming—but they are worth it, a delicious delicacy. Finding a fruiting ginkgo tree, on the other hand, is easy, because of the smell ... like dog excrement on hot pavement.

Ginkgos drop their smelly fruit in the fall, if you're lucky after a frost. Only female ginkgos produce fruit, which is why male trees are usually planted on city streets. The best practice is to step on the fruit to mangle the outer coating and get to the pulp, then remove the nut (seed) from the pulp. Do not take whole fruits home, just their seeds with as little pulp as possible. Wash the seeds promptly, preferably outside because of the odor. Let them dry, then either roast or boil them.

Roast seeds at 350°F for an hour, then tap them gently with a hammer or similar utensil between towels to crack the nuts open. Or crack the seeds open raw with a nutcracker, then boil them in salted water. The kernels inside the shell are green like pistachios. Rub off their brown membrane, which shouldn't be eaten. (Some brave, and perhaps misguided, folks put the seeds in a container and microwave them until they pop.) Once you've roasted or boiled the nuts, salt them and serve. They can be eaten by themselves or used in soups, stuffing, meat and poultry recipes, vegetable dishes, and desserts.

Also called the maidenhair tree, the ginkgo is one of three ancient tree species, along with the sassafras and the monkey puzzle tree (see separate entries). Fossil records tell us they were all around for dinosaurs to munch on some 270 million years ago. Today there are some living ginkgos in Asia said to be more than 4,000 years old. The ancient Chinese name for the tree was *yingo* (meaning silver fruit or silver apricot), which was adapted to Japanese as *ginkyo*. When naturalist Engelbert Kaempfer, the first Westerner to see the species, wrote down the name in 1712, his lousy handwritten *y* was misread as a *g*, and we've been saying it wrong ever since.

Gladiola

Gladiolus spp.

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES See harvesting details below.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Gladiolus have sword-shaped, medium-green leaves and funnel-shaped flowers on slender tall spikes. Flower spikes are 2–3 feet tall of various colors.

TIME OF YEAR Plant in spring after all threat of frost; blossoms in 60–90 days

RANGE The Mediterranean south into Africa; cultivated widely

ENVIRONMENT Full sun; well-drained, fertile soil

METHOD OF PREPARATION Petals raw or cooked

Green Deane's Notes

When you live where the ground freezes in winter, you have to wrap some plants and take others inside. That was an annual assignment when I was growing up, and on top of the list was digging up gladiola bulbs every fall.

Raising gladiolas was one of my mother's hobbies, and I got to do all the work. Boxes of glad bulbs overwintered in our basement. Every year they had to come out of the ground in her huge gladiola garden, usually on a very bitter fall day. If I'd known then that gladiola blossoms were edible, it might have made the chore more bearable.

Glad blossoms are bland, lettuce-like. Basically, you eat the petals. You must remove the anther—that is, take the middle of the blossom out. The petals can also be cooked—boiled or steamed—and, like squash blossoms, are often filled or stuffed with something tasty.

To my knowledge, the rest of the plant is not edible, although we know the leaves have vitamin C from a report published in the Soviet Union in September 1945. Given that date, one can't help but wonder if gladiola leaves were, like tulip bulbs in Holland, used as famine food during the war.

Glasswort

Salicornia spp.

NOTABLE NUTRIENTS OR USES Sodium, calcium, magnesium, phosphorus, potassium

SAFETY NOTES See preparation notes below.

NATIVE STATUS Native and introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Fleshy, erect plant 2–18 inches, may turn red in winter or with age, usually forms dense stands in tidal areas. Very small, opposite leaves, shaped like fish scales. Jointed stems, joints wider than long. Tiny flowers sunken in stem joints, only stamens typically visible. Small, succulent fruit contains one seed.

TIME OF YEAR All year

RANGE Coastal areas of Mexico, the US, and Canada

ENVIRONMENT Salt marshes, beaches, mangroves, along interior salt lakes

METHOD OF PREPARATION Young leaves and stems raw, cooked, or pickled.
Oil pressed

Nutrition Notes

Per 100 grams

45 calories, 0.7 g fat, 9.1 g carbohydrates, 3.1 g protein, 0.5 g fiber

Vitamin C	3 mg
Calcium	150 mg
Copper	0.3 mg
Iron	2.2 mg
Magnesium	110 mg
Phosphorus	80 mg
Potassium	50 mg
Sodium	870 mg
Zinc	0.4 mg

Green Deane's Notes

There's significant commercial interest in glasswort because it can produce an excellent, nutritious oil—similar to safflower oil in composition, with a nutty flavor and a texture like olive oil. The raw seeds are not edible because of saponins, but those are left behind when the oil is extracted. I like the leaves and stems raw in salads.

As with most greens, harvest glasswort when young and tender. As with other saltwater-fed seaside plants, you can soak or simmer it in water to reduce the sodium content. The entire plant grows woody as it ages, but in stages. You may find when you go to chop it that you have stems with a thin woody core that are still fleshy on the outside. Boil those pieces anyway, then strip the fleshy green exterior off the inner light yellow wood and throw the woody parts away. For salads and pickling, select the youngest parts possible—make sure they don't have a woody core, which you don't want if you aren't going to cook them. Older pink parts of glasswort can be used to make salt or for seasoning.

An ash made from the plant was used in the manufacturing of glass, hence its name. The ash is also good for making soap, especially if you don't have hardwood ash available. Glasswort has been used as a diuretic and an antiscorbutic (to relieve scurvy). Species include *Salicornia ambigua*, *S. bigelovii*, *S. maritima*, and *S. virginica*. Glasswort is sometimes called samphire, saltwort, or pickleweed, though those common names are also used for other species.

Goji Berry

Lycium barbarum, Lycium chinense

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, calcium, potassium, riboflavin

SAFETY NOTES Avoid if allergic to other fruits and vegetables in the nightshade family (such as tomatoes, peppers, and eggplant). Can increase the potency of certain blood thinner medications. High in lectins, carbohydrate-binding proteins, which can bother some people's digestion or cause other ill effects

NATIVE STATUS *Lycium barbarum* and *L. chinense* are both introduced; *L. carolinianum* is native.



Green Deane's Itemized Plant Profile

IDENTIFICATION Shrub to 6 feet, sprawling, spiny; with small, succulent leaves. Lavender or blue flowers four-petaled, somewhat tubular, usually singular. Berries red or orange, fleshy.

TIME OF YEAR Varies with climate

RANGE Nova Scotia south along the coast to Texas and Mexico. Also in California.

ENVIRONMENT Coastal areas or inland salty ground

METHOD OF PREPARATION Ripe berries fresh or dried for tea, shoots and leaves boiled

Nutrition Notes

Dried berries, per 100 grams

349 calories, 0.39 g fat, 77.06 g carbohydrates, 14.26 g protein, 13 g fiber

Vitamin A	26822 IU
Vitamin C	48.4 mg
Calcium	190 mg
Iron	6.8 mg
Sodium	298 mg

Green Deane's Notes

Many plants have famous—or infamous—relatives that outshine them. The Natal plum comes to mind: Its ripe fruit is edible, but you usually hear more about its deadly relative the oleander. The native-to-Asia goji berry, meanwhile, steals the nutritional spotlight from its North American relative the also-edible Christmas berry (*Lycium carolinianum*).

Lycium barbarum and *Lycium chinense* produce the commercial fruit called goji berry. The plants may alternatively be called the wolfberry or matrimony vine, and *L. chinense* also has the common name Chinese Desertthorn. Goji berries are usually bought dried, like raisins, to be added to salads, baked goods, cereal, and other recipes. You can also make tea with them. Young goji shoots and leaves can be cooked as a green. I eat the ripe berries right off the bush. They're also consumed in the form of juice and nutritional-supplement pills and powder.

The goji is known as a powerful antioxidant with several other potential benefits: improving metabolism, bolstering the immune system response, helping regulate blood pressure, protecting cardiovascular health, and slowing down aging. Animal research suggests it may be effective against cancer, inflammatory diseases, macular degeneration, and glaucoma. One chemical compound, physalin, is extracted from goji berries to treat hepatitis B. Another, betaine, is taken by bodybuilders to bulk up.

Golden Dead Nettle

Lamium galeobdolon

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES No known safety issues

NATIVE STATUS Naturalized in several states



Green Deane's Itemized Plant Profile

IDENTIFICATION Mat-forming perennial, evergreen in southern regions. Stems erect, hairy, square. Leaves opposite, pointed, ovate or heart-shaped, coarsely serrated, silvery with green veins, covered with short, fine hairs. They have a pungent odor when crushed. Basal leaves have long petioles. Flowers yellow with brown spots and a hairy ring inside, two-lipped, hooded, in whorls in leaf axils.

TIME OF YEAR Shoots and leaves appear in spring in northern areas, can be available year-round in southern climates. Nonedible blossoms in June and July.

RANGE Native to Europe and Asia; introduced to US; a noxious weed in Washington State.

ENVIRONMENT Dry and shady or wet and sunny, but thrives best in moist soil with partial shade

METHOD OF PREPARATION Shoots and leaves raw, boiled, or sautéed; nectar drunk

Green Deane's Notes

Golden Dead Nettle is in the eye of the beholder. If you want a ground cover that will grow in shady, dry spots, this plant is exactly what you're looking for. But it also likes sunny, watered places and is nearly impossible to eradicate after it escapes the shady, dry spots where you put it. Formal gardeners love it or hate it, with few opinions in-between. Foragers just eat it. Nectar can be sucked out of the flower. The young shoots and leaves can be consumed raw, boiled, or sautéed. Studies on other *Lamium* showed that the shoots contain vitamin C, iron, and fiber.

A member of the mint family, *Lamium galeobdolon* is known by various common names, including the Yellow Archangel and Silver Nettle Vine,

and has had other botanical names, *Galeobdolon luteum* and *Lamiastrum galeobdolon*. It's called a *dead* nettle because it doesn't sting. Deer don't like to eat it, but ants are attracted to certain oils in the seeds and can carry them more than 200 feet, which makes the species myrmecochorous (spread by ants)—and extremely invasive. It also can withstand a heavy frost and may produce 800 seeds per plant.

For Golden Dead Nettle seeds to germinate, they need to be moist and cool for six months; that's why the plant grows well in Great Britain and has proliferated so much in the Seattle area that it is officially a noxious pest in some counties.

Golden Rain Tree

Koelreuteria paniculata

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES See notes below.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Deciduous stout tree or shrub, with bumpy branches and grayish brown or black bark, fissured with small lenticels. Leaves bundled on young branches, pinnate, with short or no stems, ovate, sometimes hairy. Flowers pale yellow, four petals, slightly fragrant.

TIME OF YEAR Fall

RANGE Native to Asia; planted in temperate areas

ENVIRONMENT Full sun, rich soil, will tolerate some variation

METHOD OF PREPARATION Boiling shoots and leaves

Green Deane's Notes

Koelreuteria paniculata is in a genus named for 18th-century German botanist Joseph Gottlieb Koelreuter, who was noted for two things: his ingenious experiments in hybridization and his complaint that professors of botany didn't make much money. The golden rain tree was introduced to the West from China by a Jesuit missionary in 1747 reached America by 1809, when Thomas Jefferson germinated seeds sent to him by a French friend. While it has since become a popular landscape tree worldwide, it is also an invasive species in many places.

You can boil the tender young shoots and leaves. They should *not* be eaten raw because they have traces of cyanide, which are reduced in cooking. The leaves and shoots also have some antioxidant properties. All reports say the seeds are edible if roasted, but I'd be careful about consuming them—they contain erucic acid, which is also found in unrefined canola oil. (Erucic acid is toxic in large amounts, or when consumed continuously, but is also a component of Lorenzo's oil, the famed experimental treatment for the neuromuscular disorder adrenoleukodystrophy.) Outside of food use, the tree's yellow flowers produce a yellow dye and an eye wash, and its mature leaves produce a black dye.

Goldenrod

Solidago spp.

NOTABLE NUTRIENTS OR USES No nutritional information available; vitamin C, rutin, quercetin

SAFETY NOTES If picking leaves for tea, make sure they are fungus-free: A toxic fungus that grows on some leaves can poison tea made from them. All leaves are toxic to sheep.

NATIVE STATUS Native to North and South America and western Europe



Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial 2–3 feet tall, with yellow flowers in dense, branched clusters at the tops of hairy stems. Dark-green alternate leaves, single-veined, pointed tips, stemless, 1–4 inches long, narrowing toward top.

TIME OF YEAR Summer to fall in northern climes, year-round where warmer

RANGE Found in most of North America, except western states/provinces

ENVIRONMENT Prefers sandy soil but grows well in fertile soil. Also grows in clay. Full sun or semi-shade

METHOD OF PREPARATION Dry leaves and flowers to make tea.

Green Deane's Notes

After the Boston Tea Party of 1773, the colonists turned to goldenrod tea as a homegrown alternative to what came from England—and not just any goldenrod, but *Solidago odora*. It became known as “Liberty tea” and was even exported to China.

As a kid growing up 130 miles north of Boston, I never thought of goldenrod as revolutionary. It was one of two blossoms that shaped my view of the world. When the lilacs bloomed in mid-May, I knew school was almost over for the summer. And in late August, the goldenrods began to bloom, which meant back-to-school was coming soon.

Goldenrod is not just another pretty face. Thomas Edison experimented with goldenrod to make rubber, which it exudes naturally. In the 1930s he managed to get 12% rubber out of each plant, and Henry Ford gave Edison a Model T with tires made out of goldenrod rubber. Edison turned his goldenrod rubber research over to the government, which pursued it until synthetic rubber was developed during WWII.

Goldenrod tea has been an herbal standard for a long time, and it reportedly offers greater antioxidant activity than green tea. Studies on *S. canadensis* and *S. chilensis* identified rutin and quercetin among the main flavonoids, compounds that can have anti-inflammatory and cardiovascular benefits. *S. odora* leads the genus for making a pleasant-tasting tea. If you want the colonists' type of tea, find goldenrod whose leaves smell like licorice when crushed. You use dried leaves and flowers to make tea. Also, the seeds and roots of some goldenrods are edible and taste like raw potato. They are definitely a famine food (only eaten in a survival situation).

Medicinally, *S. odora* has been used to treat digestive and urinary disorders, wounds, ulcers, and other ailments. Parts of *S. canadensis* have been made into a cold-medication syrup, an application for toothache, a poultice to soothe burns and boils, and a salve for insect bites. The flowers of *S. canadensis* also yield a deep yellow dye.

The plant has gotten some bad publicity regarding allergies, most of it undeserved. Its pollen is heavy, doesn't travel well, and is not the allergen it's thought to be (the problem is usually Ragweed). Goldenrod has, however, been linked to cases of dermatitis.

As a ruderal species, goldenrod would be among the first plants to take advantage of disturbed or burned ground. It grows so quickly, it often can make a cleared site fragrant and attractive. The goldenrod is the state flower of South Carolina, Kentucky, and Nebraska and the state herb of Delaware. (You didn't know some states have state herbs? You do now.)

Gooseberry

Ribes spp.

NOTABLE NUTRIENTS OR USES Potassium, calcium, magnesium, vitamin C

SAFETY NOTES The spines present on some species melt upon cooking.

NATIVE STATUS Native and introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Spiny, branching shrub with dark-green, deeply lobed leaves. Bell-shaped flowers in clusters of two or three, producing inch-long round berries with a lot of seeds. Berries may be red, green, purple, pink, or yellow.

TIME OF YEAR End of summer into fall

RANGE Native to Eurasia, now found across much of North America

ENVIRONMENT Cool, humid locations; can tolerate some shade

METHOD OF PREPARATION Raw or cooked as an ingredient

Green Deane's Notes

For more than 50 years starting in 1911, the planting of gooseberry was banned by the federal government because the shrubs were intermediary hosts for the white pine blister rust, a disease that kills pine trees. As you might imagine, in the Pine Tree State of Maine gooseberries weren't just banned. They were sought out and destroyed ... but not all of them.

Nutrition Notes

Per 100 grams

44 calories, 0.58 g fat, 10.2 g carbohydrates, 0.88 g protein, 4.3 g fiber

Vitamin A	290 IU
Vitamin B1 (thiamine)	0.04 mg
Vitamin B2 (riboflavin)	0.03 mg
Vitamin B3 (niacin)	0.3 mg
Vitamin B5 (pantothenic acid)	0.27 mg
Vitamin B6 (pyridoxine)	0.8 mg
Vitamin B9 (folic acid)	6 mcg
Vitamin C	27.7 mg
Calcium	25 mg
Copper	0.7 mg
Iron	0.31 mg
Magnesium	10 mg
Manganese	0.14 mg
Phosphorus	27 mg
Potassium	198 mg
Selenium	0.6 mcg
Sodium	1 mg
Zinc	0.12 mg

The first time I saw gooseberries was in the early 1960s near a caved-in farmhouse that my mother and I discovered along an abandoned road in the woods. We used to go horseback riding through large expanses of woods, where there were roads that horses could pick their way through but that would be inaccessible in a vehicle because the rocks and ledges would hang

up its undercarriage. On one such road, we found this old farmhouse where gooseberries—and their relative, currants—were still growing next to the foundation. They probably escaped eradication because of the remote location.

In 1966, regulation of the gooseberry fell to individual states. These days, in more places than not you can plant them. Gooseberries used to have their own genus, *Grossularia*, but are now grouped in *Ribes* along with currants (see separate entry). *R. hirtellum* is a common North American species. The fruit is generally sour, though red gooseberries are sweeter than green ones. Gooseberries can be eaten raw or pickled or used in pies, jams, fruit leather, and wine, even for flavoring cheese.

Goosegrass

Galium aparine

NOTABLE NUTRIENTS OR USES Potassium, vitamin E, calcium, antioxidants

SAFETY NOTES See preparation notes below.

NATIVE STATUS Native



Nutrition Notes

Per 100 grams

calories NA, fat NA, carbohydrates NA, 1.6 g protein, 2.1 g fiber

Vitamin E	15.4 mg
Calcium	145 mg
Copper	0.1 mg
Iron	3.2 mg
Magnesium	13 mg
Manganese	0.7 mg
Phosphorus	65 mg
Potassium	517 mg
Sodium	39 mg
Chloride	97 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Weak, square stems sprouting little hooks that bend back toward the bottom of the plant. Leaves small and skinny, six to eight in a whorl around the stem; lowest leaves are roundish and have stems; upper leaves stemless, narrowly oblanceolate. Tiny, four-petaled white flowers on small stalks where leaves meet the stems. Fruit a two-lobed mini-capsule, covered with fine hooks.

TIME OF YEAR May to July in northern regions, early March in South. Grows very fast, comes and goes quickly

RANGE Native to Europe and North Africa, now found worldwide

ENVIRONMENT Rich moist ground, upland scrub, woods, thickets, and waste ground beside trails

METHOD OF PREPARATION Shoots and tips of young plants raw or boiled, seeds roasted and ground

Green Deane's Notes

Covered with a multitude of small “hooks” growing from the leaves and stems, *Galium aparine* clings to almost everything it touches. It clings so well, you don't have to take a bag with you to collect it. I usually just grab a bunch and touch it to my backpack—instant stick. Indeed, the real headache with goose-grass is cleaning it of debris. It hates to let go of anything (which means a ball of it makes a good sieve), as reflected in its common name of cleavers, Sticky Willy, grip grass, and catch weed.

Goosegrass has that name because geese love it—so do most farm fowl and livestock. It's considered a weed in some places, and sale of its seeds are prohibited or restricted in several states. In the past this “Velcro plant” was believed to be good for the lymph and immune systems. Modern research says it is an antioxidant—mainly by virtue of flavonoids and phenolic

compounds—and, according to a 2016 report in *Journal of Ethnopharmacology*, might be a weapon against breast cancer.

Young shoots and tips raw or boiled make an excellent green. (Note: Raw shoots will have a hairy texture; cooking moderates that.) Cook 10–15 minutes and add salt, pepper, and butter or olive oil, or let them cool and add to salads, omelets, and other dishes. The seeds can be roasted at a low temperature and ground for use as a coffee substitute that actually tastes like coffee, but it has no caffeine. (*Galium* is in the same family, Rubiaceae, as coffee.) Older goosegrass plants are too tough to eat.

Other *Galium* species have edible parts. *G. verum*'s blossoms have been used for scenting cheese and butter with a honey-like fragrance, and its flower tops are an ingredient in a refreshing drink. The dried leaves of *G. mollugo* are a tea substitute, and the flowers are eaten or used as a garnish. Also listed as having edible leaves are *G. boreale*, *G. gracile*, *G. spurium*, and *G. triflorum*. Goosegrass is also the common name for some species in the *Eleusine* genus.

Gopher Apple

Licania michauxii

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES Avoid the seeds; also, consume in moderation.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Foot-tall evergreen shrub with glossy, oblanceolate alternate leaves, 2–4 inches long, with rounded tips and easy-to-see veining; yellow-green, five-petaled flowers in tiny clusters early summer; and an olive-like

fruit that is gray, pink, and somewhat pasty-looking; fruit has one large seed about an inch long that has been likened to an olive pit.

TIME OF YEAR Fruit from spring to fall, depending on climate

RANGE Southeastern states

ENVIRONMENT Dry, sandy habitats such as dunes, scrub, barrens, pine flatwoods, oak hummocks

METHOD OF PREPARATION None—pick 'em and eat 'em

Green Deane's Notes

If you like the taste of pink bubblegum, you'll like gopher apples ... if you can find them. I identified the plant years before I saw a good crop of fruit. They fly off the leafy shelves, as it were, because nearly all woodland creatures like them—especially the endangered gopher tortoises for whom they're named. You have to watch the shrubs and be quick, or the forest denizens will get to them before you can.

In all fairness, people tend to be divided about the flavor and fragrance of gopher apples. Some find them odorless and tasteless; others say they smell like a new plastic shower curtain. To me, and other foragers, they taste just like the pink sticks of gum that came in old-fashioned packs of baseball cards, sweet and fragrant. A hint of almond flavor is in there as well. I cannot explain the diversity in perception. They could be due to plant variations, taste differences, genes, or all three.

The fruit's texture is quite different from bubblegum. The off-white or pink ripe fruit is very soft, with a resistance similar to watery custard. You really can't carry them too far in your pocket. That's OK because you can eat them right off the bush. Don't eat the seeds.

Also known by the scientific name *Geobalanus oblongifolius*, *Licania michauxii* was named for André Michaux, personal botanist to King Louis

XVI of France, who traveled to the United States in the late 1700s and described the plant in his journal.

One semi-cautionary tale: A strapping young man once reported to me that he ate about 20 gopher apples together with 10 Tallow Plums in one sitting. They gave him an irregular heartbeat condition called premature ventricular contractions, which he verified with a heart monitor. It was temporary and went away within a couple of hours. We don't know if it was caused by the gopher apples or the Tallow Plums, or the combination of them, or the amount consumed, a personal sensitivity, or something else entirely.

Gorse

Ulex europaeus

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES Contains slightly toxic alkaloids. Never eat the seeds, which contain a lectin that can make you ill.

NATIVE STATUS Naturalized



Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen shrub to 6 and possibly 10 feet that forms dense thickets. Seedlings have trifoliate leaves resembling small clover leaves; leaves mature into green spines 0.4–1.4 inches long. Golden flowers with egg-shaped bracts and typical pea-flower structure. Inedible long purplish brown pod holding two or three small dark seeds

TIME OF YEAR All year, blooms heavily in spring

RANGE Mid-Atlantic states, West Coast, Hawaii

ENVIRONMENT Non-arid areas neither too hot nor too cold, coasts, disturbed ground, grass and shrubland, forest edges, waste places. Also as a hedge and in landscaping. Can grow in some shade. Makes soil poorer

METHOD OF PREPARATION Flowers as a trailside nibble or made into tea or wine

Green Deane's Notes

“When gorse is out of bloom, kissing is out of season” goes an old maxim about this evergreen that blooms year-round. A spray of gorse used to be put in bridal bouquets as an allusion to the saying.

The flowers are the only edible part of the plant, but maybe not the most ... memorable. That would be the thorns. The really bad thorns.

In August 2005, a 32-year-old Englishman by the name of Dean Bowen left a pub in North Yorkshire to walk home after many drinks. He woke up the next day in the middle of a gorse patch. Bowen couldn't remember how he got there, and couldn't find a way out of the thorny mess. On his second day stranded in the patch, he caught the attention of a passerby by using a cigarette lighter to reflect sunlight. That brought a rescue squad, but they couldn't get to him. Bowen was eventually rescued by the Royal Air Force, who lifted him out by helicopter, and then spent some time in a local hospital recovering from mild hypothermia and dehydration.

Colin Yorke, who winched Bowen to safety, said: “The man was in a patch of gorse brush 10 feet deep. We've no idea how he got there. He was right in the middle of the gorse. It was like he had been dropped there by a spaceship.”

Botanically known as *Ulex europaeus*, gorse is also called Furze. It is on many noxious weed lists and is myrmecochorous, meaning its seeds are distributed by ants. *You* should not eat the seeds, and even the edible flowers should be consumed in moderation. Nibble on them raw, put them

in salad, use them to make tea or wine, or pickle the buds (like capers). The flowers have a slight coconut aroma and almondy taste.

Gorse flowers and roots produce a yellow dye for clothing, and the flowers make an Easter-egg dye. The plant also has been used for fuel in baker's ovens and to make soap (it contains a lot of alkali). If the spines (thorns) are crushed, gorse can be fed to animals. It has half the protein of oaks, not bad for wild fodder. Horses in particular like it, especially the tender, young tips.

Gotu Kola

Centella asiatica, *Centella erecta*

NOTABLE NUTRIENTS OR USES Fiber, protein, vitamin B12, potassium, calcium

SAFETY NOTES See below for discussion of *Centella erecta*.

NATIVE STATUS *Centella asiatica*, introduced; *Centella erecta*, native



Nutrition Notes	
Per 100 grams	
2.83–5.23% fat, 11.32–12.21% protein, 23.32–28.42% carbohydrates, 41.32–46.21% fiber	
Vitamin B1 (thiamine)	0.93–1.35 mg
Vitamin B6 (pyridoxine)	0.64–0.81 mg
Vitamin B12 (cobalamin)	0.21–0.34 mg
Vitamin C	46.12–73.22 mg
Beta-carotene	26.11–29.31 mg

IDENTIFICATION *Centella erecta*, Creeping herb with slender, often fuzzy stems; leaves spade-shaped, penny- to silver dollar-size, with stems attaching to sides; flowers small and white, collectively shaped like an umbrella.

TIME OF YEAR Year-round

RANGE Southern United States

ENVIRONMENT Any lawnlike environment, not too wet, not too dry, but will grow in undergrowth areas in full sun

METHOD OF PREPARATION Raw or cooked like any green

Green Deane's Notes

Do we go with Gotu Kola or don't we? Gotu Kola, *Centella asiatica*, has a long history in Asia. But then there is *C. erecta*. It's native to the Americas, not Asia. Both *Centella* species now grow in the southern United States, and to complicate matters, they were considered the same species for a long time. *Centella asiatica* was also called *Hydrocotyle asiatica* (a name in use as late as 2020). Herbalists say *C. erecta* can be used like *C. asiatica*, while researchers warn that *C. erecta* is more of an unknown. That said, I know folks who eat it.

Our Gotu Kola likes lawns that are not too wet, not too dry: environmentally just right. Its relative, Dollarweed, see separate entry, likes damper spots. Neither like it dry. Related to ginseng, our Gotu Kola ranges from penny to silver dollar in size, except it is spade-shaped and the stem attaches to the side. And while dollarweed always tastes the same, the flavor of Gotu Kola can vary from patch to patch and by time of year (older individuals are stronger in flavor).

Gotu Kola is also related to ginseng and goes by other common names, Spadeleaf and Indian or Asiatic Pennywort. It has many herbal applications,

including lowering blood pressure, healing wounds, reducing edema, improving memory, and promoting longevity. The plant contains such beneficial compounds as carotenoids, flavonoids, tannins, and polyphenol, along with a wide range of minerals.

Goutweed

Aegopodium podagraria

NOTABLE NUTRIENTS OR USES Potassium, calcium, phosphorus, iron, vitamin C

SAFETY NOTES All parts are diuretic; roots inedible

NATIVE STATUS Naturalized in Northeast/mid-Atlantic and much of West

Green Deane's Itemized Plant Profile

IDENTIFICATION Strong and invasive ground cover. Leafy stems up to 3 feet tall. Leaf veins terminate at the tips of teeth. White, five-petaled flowers arranged in flat-topped clusters. Small, elongate seeds. Rhizomes long, white, branching



Nutrition Notes

Per 100 grams

0.37 g fat, 1.04 g protein, 1.08 g carbohydrates, 5.17 g fiber

Vitamin C	37 mg
Calcium	92 mg
Iron	1.51 mg
Phosphorus	50 mg
Potassium	540 mg
Sodium	1 mg
Zinc	0.24 mg

TIME OF YEAR Late spring to early fall

RANGE Naturalized or introduced to the US, Canada, Asia, and many other locales

ENVIRONMENT Moist soil, acidic or not. Can grow in full shade to full sun. Requires little maintenance

METHOD OF PREPARATION Leaves, preferably young, raw in salads or cooked as a potherb or ingredient

Green Deane's Notes

Goutweed does not sound too appetizing. Neither do some of its other names: Ashweed, bishop's weed, pot ash, ground elder, Dog Elder, dwarf elder, garden plague, Goat's Foot, Bullwort, herb Gerard ...

Herb Gerard? I happen to know the history of this one: Saint Gerard's gout was reportedly cured by the plant, though tuberculosis got him at age 29. Gerard (1726–1755) is the patron saint of expectant mothers and was nominated for sainthood for a miracle that helped a pregnant woman. A man of the cloth for only three years, he is said to have predicted the day and hour of his death. What I would like to know is how he managed to get gout as such an early age.

Goutweed has a long history as medicine. It was a main gout treatment until modern times, either through consumption of the plant or external use—crushing the root and holding it on the joint. Goutweed also has been used

to treat rheumatism, arthritis, and bladder disorders. All parts of the plant are diuretic.

Besides being medicinal, goutweed was a prime salad ingredient and potherb in Europe. Its young leaves, a translucent green, are tender and aromatic. They are excellent additions to salads—as are the young stems—and can be used as a potherb, added to soups and fritters as well, or steamed. Goutweed is also often cooked with cheese. The taste is tangy, and not everybody likes it. Eat older leaves boiled. Goutweed's roots are inedible.

Ground-Cherry

Physalis spp.

NOTABLE NUTRIENTS OR USES Vitamin A, phosphorus, vitamin C

SAFETY NOTES Unripe fruit (light green) is toxic. See below for details about Chinese lantern.

NATIVE STATUS Native and/or introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION *Physalis walteri* (aka *P. viscosa*), low-growing plant covered with fine hairs, has strong branching stems, and may appear gray. Leaves wavy, with or without teeth, stems angled often at 90 degrees. Flowers yellow with purplish antlers and possibly a dark center. Fruit a light to golden-yellow sticky berry that does not fill its papery husk, growing solitary from the leaf's axil

Nutrition Notes: *P. angulata*

Per 100 grams	
26 calories, 0.4 g fat, 3.2 g protein, 4.5 g carbohydrates, 1.4 g fiber	
Calcium	81 mg
Phosphorus	135 mg

Nutrition Notes: *P. peruviana*

Per 100 grams

113 calories, 0.5 g fat, 11.2 g carbohydrates, 1.9 g protein, 0.8 g fiber	
Vitamin A	720 IU
Vitamin B1 (thiamine)	0.11 mg
Vitamin B2 (riboflavin)	0.04 mg
Vitamin B3 (niacin)	2.8 mg
Vitamin C	11 mg
Calcium	9 mg
Iron	1 mg
Phosphorus	40 mg

Nutrition Notes

Per 100 grams, yellow cherries

49 calories, 0.25 g fat, 11 g carbohydrates, 2.54 g protein, 0.4 g fiber	
Vitamin A	1008 IU
Vitamin B3 (niacin)	3.9 g
Vitamin C	15 mg
Calcium	13 mg
Phosphorus	56 mg

TIME OF YEAR Blossoms in late spring, fruit in late summer toward fall

RANGE Eastern North America, but cultivated worldwide

ENVIRONMENT Old fields, sunny woods, stream borders, cultivated fields, waste ground, railroads, roadsides. Full sun or some shade. Likes water and humidity

METHOD OF PREPARATION Raw or cooked like any fruit

Green Deane's Notes

Worldwide, there might be as many as 80–100 species of ground-cherry in the genus *Physalis*. North America has about 30, 8 of which were used by the Natives. Tomatillos are a *Physalis* cultivar, *P. ixocarpa*.

Other *Physalis* with edible fruit are *P. angulata*, *P. fendleri*, *P. heterophylla*, *P. lanceolata*, *P. longifolia*, *P. neomexicana*, *P. pruinosa*, *P. pubescens*, *P. turbinata*, and *P. virginiana*. Common names include husk tomato or Husk Cherry, strawberry tomato, winter cherry, poha, Cape gooseberry, and Golden Berry.

Yellow or gold ground-cherries are edible raw or made into pies and preserves (pectin has to be added to make jelly or jam). Several websites say the red variety, *P. alkekengi* (Chinese Lantern), is edible, and it has been described as both tasteless and bitter. I might taste red ground-cherries, but I do not recommend eating them and have found few credible references to their edibility.

The fruit can fall from the ground-cherry plant before it is ripe. It will ripen off the plant—that may take a week or two, even longer—but like a tomato, it will not improve in sweetness off the plant. You can store ground-cherries for several weeks if left in their husks, which should not be eaten.

Ground Ivy

Glechoma hederacea

NOTABLE NUTRIENTS OR USES Protein, vitamin C, vitamin A

SAFETY NOTES Toxic to horses

NATIVE STATUS Introduced



Nutrition Notes

Per 100 grams

6.1 g protein

Vitamin A	73 RE
Vitamin C	55 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Creeping perennial. Flowers blue-violet, less than half an inch long, usually in clusters of three in the axil (between the stem and petiole). Opposite leaves, nearly round or kidney-shaped, long stems, scalloped edges, large rounded teeth. Stems square, trailing, rooting at the nodes, mostly hairless but occasionally with short, stiff backward-pointing hairs. Each flower produces four seeds—tiny, brown egg-shaped nutlets.

TIME OF YEAR Blooms late spring/early summer in cooler climes, spring and fall in warmer areas

RANGE All states but Arizona, Nevada, and New Mexico

ENVIRONMENT Thrives in moist but not saturated shaded areas, and will tolerate sun. Grasslands, wooded areas, disturbed ground, around dams. In lawns and around buildings where grass is mown

METHOD OF PREPARATION Young leaves and shoots cooked like a green; fresh or dried leaves used for tea

Green Deane's Notes

Most of the time when someone mentions ground ivy, the comment is something like, “How do I get rid of the &^%#@ stuff?” It’s a prime weed in turfgrass and landscaping. If you desire a well-behaved English-type garden, ground ivy will drive you insane. While it may be small, it’s the botanical bull in the china shop: It doesn’t take over, it takes command.

Ground ivy is difficult to permanently remove from any soil other than very loose, and because it roots at the nodes, it survives mowing.

Once known as *Nepeta glechoma* and *Nepeta hederacea* (*Nepeta* is the catnip genus), ground ivy is often misidentified as common mallow (*Malva neglecta*), which has a round stem, whereas ground ivy's is square. It is somewhat similar in appearance to Ground Henbit (*Lamium amplexicaule*), Purple Dead Nettle (*Lamium purpureum*), and Persian Speedwell (*Veronica persica*), but none of those three have creeping stems that root at the nodes.

Common names include Alehoof, cat's foot, field balm, run-away-robin, Lizzie-Run-Up-the-Hedge, creeping Charlie—a name for way too many plants—and gill-over-the-ground, perhaps the most common after ground ivy. Alehoof means “ale herb,” from a time when Saxons used it like hops.

Ground ivy is in the mint family and smells like mint when crushed or mowed. Fresh or dried leaves are made into an herbal tea. You can eat young shoots and leaves like spinach. Ground ivy is *not* a gentle mint, and it will flavor a soup or other dish if cooked in it, so taste before adding.

Groundnut

Apios americana

NOTABLE NUTRIENTS OR USES Protein, genistein, linoleic acid

SAFETY NOTES See preparation recommendations below, and watch out for poison ivy when harvesting it. (It often grows nearby.) Also, don't confuse groundnut for milk pea or Hairy Groundpea.

NATIVE STATUS Native



Nutrition Notes

Per 100 grams

calories NA, 0.7 g fat, 14.9 g carbohydrates, 3.1 g protein, 8.5 g fiber

Vitamin B2 (riboflavin)

0.03 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Climbing vine to 20 feet, thin, tough, covered with fine hair. Pinnate leaves with three to nine pointed leaflets—five leaflets is the norm—about 2 inches long. Flowers red-brown or purple, pea-like wings and

keel, look far better than they smell. Seeds (beans) in a pod. Roots like strings of beads, usually egg-size

TIME OF YEAR Blossoms in summer in most places, earlier where warmer; sets fruit all the time

RANGE From Colorado east, was cultivated in Europe and India

ENVIRONMENT They like the moist soil near streams and bodies of water, places usually populated with poison ivy and mosquitoes, rivers, streams, and lakes.

METHOD OF PREPARATION Tubers and beans boiled, fried, roasted

Green Deane's Notes

When we talk about eating groundnuts, we are referring to the tubers of the groundnut plant, *Apios americana*. The plant also produces edible beans, which grow in pods from ruddy blossoms. From the look of the flowers and the vine, the groundnut is unmistakably in the pea family. So it's a legume, not a nut.

The tubers have about three times as much protein—not a common macronutrient among plants in the wild—as potatoes. The species also contain genistein, an isoflavone most commonly found in soybeans (another protein-rich plant food) that has been shown to have anticancer power. A report from the University of Missouri when its researchers identified genistein in groundnuts said it “should rekindle interest in this legume as a food crop.”

Should you decide to go looking for groundnuts, they are easy to identify once you locate the roots. They're like beads on a string, except larger and farther spread out, with the spacing irregular. The “string” can branch off. But once you find the string, you are on to them and all you have to do is dig them out from other roots. They can be dug any time of year.

Where you find elderberries, you can often find groundnuts. Poison ivy likes the same environment, so beware. (I got my first case of poison ivy—and caught it several times since—digging for groundnuts.) I look for vines climbing bushes and trees. Start digging where the vine enters the earth near a bush. That's usually, but not always, where the largest tubers are. Often the roots are just under the surface. They can crisscross, as cattail rhizomes do, and wend their way complexly around and through other roots. Also look for exposed groundnuts after river flooding—when they may be just hanging on the banks.

Groundnuts can be as small as peas or as large as baseballs, and they may be smooth or lumpy. Most of the ones I find look like dark-brown lumpy eggs. First-year groundnuts are light yellow to reddish brown and small. Second year, they're larger, darker, coarser, and harder to peel. The tubers can be stored up to 15 weeks in the refrigerator without any significant loss of quality.

Some foraging writers say the tubers are edible raw, but that tells me they never tried to eat one raw or coped with the gas they produce. Groundnuts have a bitter latex in them, so they should be cooked. They also have some “anti-nutrition factors,” including protease inhibitors, which cooking neutralizes. Cut out any dark spots, and peel them before eating. Do not use aluminum cookware because groundnuts will stain it.

I prefer to boil groundnuts first and then cook them another way, such as frying. But you can slice them raw and fry, or eat them after only boiling (like a potato). Boiled then roasted groundnuts can be ground into a flour. Groundnuts definitely taste better when they are hot. Their texture and flavor degrade as they cool, though they can be warmed up again and all is well. The flavor to me is similar to a true yam, with the texture of boiled turnip. The groundnut's beans are edible when shelled and cooked.

The first time you try groundnuts, eat only a little to make sure it agrees with you. Some people have a bad reaction—I suspect that comes from undercooking or an allergy. Some people develop an intolerance for groundnuts after eating them without incidence for years.

Groundnut tubers contain similar amino acids as beans, predominantly aspartic acid and glutamic acid, and groundnut beans have linoleic acid, an omega-6. You may find an inaccurate nutritional profile on the internet for the groundnut that comes from the generic profile for “Peanuts, all types, raw,” as issued by the USDA. Someone assumed the groundnut is a peanut, and the mistake got copied rather than corrected.

Be careful not to mistake the nonedible milk pea for the groundnut. The plants have similar leaflet arrangements, but milk pea leaves have round tips, whereas the groundnut’s are pointed, and the milk pea’s flowers are white—also, the milk pea prefers dry ground. Don’t confuse the groundnut, either, with *Vigna luteola*, the Hairy Cowpea (see next entry), which has leaflets of three and yellow blossoms.

Hairy Cowpea

Vigna luteola

NOTABLE NUTRIENTS OR USES No nutritional information available; protein

SAFETY NOTES See detailed harvesting tips below.

NATIVE STATUS Unclear



Green Deane's Itemized Plant Profile

IDENTIFICATION Twining or trailing perennial herb; stem up to 20 feet, slightly hairy. Alternate leaflets in groups of three, leaves lanceolate; yellow flowers, much wider than long, in pairs at nodes. Pod curved with short curved beak, slightly indented between seeds. Mature green pods are hairy; old ones lose the hair.

TIME OF YEAR Year-round but favors summer; fruits in fall

RANGE From Texas east and then north to Pennsylvania

ENVIRONMENT Near lakes, streams, swamps, swales, or the lawn you water too much (or its irrigation sprinkler)

METHOD OF PREPARATION Flowers and young seeds cooked; flowers raw in moderation

Green Deane's Notes

Most of the pea family is not edible, particularly the trees. However, many wild peas are more nutritious than their cultivated brethren. The Hairy Cowpea is one of them. We know the seeds are 22% protein, which is about twice the level of corn and three times that of rice.

Vigna luteola, a twining vine found near water, has two well-known relatives: *Vigna unguiculata*, the black-eyed pea, and *Vigna radiata*, the mung bean. At one time it was thought the Hairy Cowpea was the ancestor of the black-eyed pea, but now they think the wild black-eyed pea was the ancestor of the cultivated black-eyed pea. Sounds incestuous and confusing. And just how the Hairy Cowpea got from Africa to the Americas—by some accounts, it's native in the Americas—is a bit of a botanical dilemma we need not worry about. Edibility, not origin, is our concern.

The Hairy Cowpea's seeds and flowers are edible cooked. I eat the flowers as a trailside nibble—they taste like raw peas or green beans. I do advise caution with the flowers: Go light on them, as yellow blossoms in general tend to be laxative. The seeds (preferably green ones, not old brown ones) are boiled for human consumption. They can be eaten raw by goats and cattle but have to be cooked for pigs and horses.

Of eight wild pea species tested by researchers in India, the Hairy Cowpea had the highest level—five times more than any other pea—of lectins, proteins common in legumes that may cause digestive or inflammation problems. Lectins are what make legumes iffy for some people and why you can't eat kidney beans raw, and why I eat Hairy Cowpeas when they

are young. I discourage people from eating dried Hairy Cowpeas because of the lectins.

Hardy Orange

Poncirus trifoliata

NOTABLE NUTRIENTS OR USES Vitamin C, protein

SAFETY NOTES Listed as “poisonous” by the University of North Carolina, which says the fruit can cause stomach pain and nausea, and skin that touches it can suffer irritation, but adds that the toxicity level is low and skin irritation lasts only a few minutes.

NATIVE STATUS Naturalized



Nutrition Notes

Per 100 grams

(rind) 3.31% fat, 5.15% protein

(flesh) 2.62% fat, 6.65% protein

Vitamin C

4.7 mg (rind), 70.93 mg (flesh)

Green Deane's Itemized Plant Profile

IDENTIFICATION Tree to 20 feet, hard and dense wood, bark striped with green, stems triangular, loses leaves in winter. Leaves alternate, compound, shiny dark green, 1–2 inches long, may be finely wavy-toothed, petiole winged, three leaflets. Flowers white, cup-shaped, fragrant. Vicious thorns, small fruit.

TIME OF YEAR Flowers in early spring, fruit in late fall

RANGE Pennsylvania down to northern Florida and west into Texas

ENVIRONMENT Generally any moist soil that's not lime-heavy or waterlogged; prefers full sun but can tolerate some shade

METHOD OF PREPARATION Made into marmalade, seasoning, a juice drink

Green Deane's Notes

American colonists grew this cold-hardy pseudo-citrus—the only member of the monotypic *Poncirus* genus—because it has pectin, which was used in making jams and jellies. The fruit, minus seeds, was made into a not-sweet marmalade. In northern Europe, the fruit rind was candied and dried. In China, the bitter fruit was dried and powdered for use as a seasoning, and young leaves occasionally boiled and eaten.

Hardy oranges allowed to sit for two weeks after picking yield juice, which can be diluted and made into a drink. The fruit's flavor is a cross between lemon and grapefruit. A slice of it is good in a gin and tonic. The hardy orange's appeal as food may depend on how hungry you are. Nutritional research revealed that the rind has twice as much sugar, and lower amounts of citric, malic, and oxalic acids, as the flesh—which would explain why the peel tastes sweeter and the flesh more tart.

Do note that processing the hardy orange leaves a hard-to-wash-off resin on utensils. The fruit may have some antiallergic and diabetic applications. In

Chinese medicine it has been used to treat toothache, hemorrhoids, conjunctivitis, colds, itchy skin, and typhoid.

Birds select the hardy orange to make their nests because its 2-inch thorns dissuade predators. The thorns are sturdy enough to puncture a tire (and they can also be used as a toothpick). The tree is a common bonsai specimen and can be used as a natural fence. Deer don't like it, nor do rabbits. The aromatic fruit can also be dried and mixed into potpourri.

Hawthorn

Crataegus spp.

NOTABLE NUTRIENTS OR USES Calcium, magnesium, vitamin C

SAFETY NOTES Avoid seeds, which contain a compound that is metabolized into cyanide; see details about leaves below.

NATIVE STATUS Native and introduced



Nutrition Notes: *C. douglasii*

Per 100 grams

79 calories, 1.4 g fat, 17.5 g carbohydrates, 1.2 g protein, 2.6 g fiber

Vitamin A	8 RE
Vitamin C	9.5 mg
Calcium	31 mg
Copper	0.3 mg
Iron	0.5 mg
Magnesium	12 mg
Manganese	0.2 mg
Phosphorus	12 mg

Sodium	6.9 mg
Zinc	0.2 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Deciduous tree 15–30 feet tall, branches slightly pendulous if not erratic, long thorns on stems. Leaves greatly varied, often a sprawling, spatula-like shape. (*Crataegus monogyna*'s are simple, alternate, to 3 inches long, serrated at lobe tips.) Flowers small and white with five petals. Fruit a red pome with one seed or multiple seeds, depending on species

TIME OF YEAR Fruit ripens in autumn; flowers bloom in late spring.

RANGE Both coasts of the US; Europe, portions of Australia and New Zealand, South Africa

ENVIRONMENT Prefers moist, fertile soil and full sun

METHOD OF PREPARATION Eat out of hand or make into jelly, sauce, vinegar, flavoring for alcohol

Green Deane's Notes

The first hawthorn I ever saw—and the only one I knew for quite a while—grew across the dirt road by our house in Maine. This hawthorn was very old, and what I remember most clearly were its huge thorns, 2 inches long. They protected a lot of bird's nests. I never knew which species of hawthorn it was, but that's not unusual with the *Crataegus* genus. Experts today can't agree how many species there are, perhaps 280. The trees can live 400 years or longer.

That hawthorn in Maine grew on high ground at the intersection of two pastures, a very fitting place. The name hawthorn derives from Old English for hedge, and the trees were used not only as hedges but as hedges that

marked off land, per a 19th-century law in England. Hawthorns make good landscape trees and can be espaliered—trained to vine and cover a wall.

Hawthorn is a relative of the rose, and its fruit resembles rose hips. They are high in citric acid and have 17 amino acids. You should not eat their seeds: They contain a bit of pro-cyanide bonded with sugar; in your gut, that changes to hydrogen cyanide and can be deadly in large amounts. If you cook the berries, strain out the seeds.

If you eat hawthorn berries raw, spit out the seeds. Swallowing one or two shouldn't be any more of a bother than apple seeds but is best avoided. The berries are high in pectin but typically have little flavor, so they need to be combined with other fruits to make jelly. (Some hawthorns may be tasty enough for jelly in their own right.) Berries from *C. monogyna*, the one-seed hawthorn, can be made into a no-cook jelly.

The flowers and buds are also edible raw. Very young spring leaves are edible in moderation, and have more nutrients than the fruit. Hawthorn berries can also be used to infuse alcoholic spirits and to make vinegar, which has antioxidants. Of the hawthorn's widely researched medicinal applications, the best known may be as a betablocker for high blood pressure.

Henbit and Dead Nettle

Lamium spp.

NOTABLE NUTRIENTS OR USES Protein, potassium, calcium, phosphorus, vitamin B1

SAFETY NOTES Toxic to horses, cattle, and sheep

NATIVE STATUS Introduced



Nutrition Notes

Per 100 grams

L. amplexicaule: 370.4 calories, 52.7 g carbohydrates, 12 g protein, 12.4 g lipids;

L. album: 6.5 g protein, 1.9 g fiber

Vitamin A	644 RE (<i>L. album</i>)
Vitamin B1 (thiamine)	414 mcg (<i>L. amplexicaule</i>)
Vitamin B2 (riboflavin)	3.9 mcg (<i>L. amplexicaule</i>)
Vitamin C	143.5 mcg (<i>L. amplexicaule</i>) 76 mg (<i>L. album</i>)
Calcium	76 mg (<i>L. album</i>)
Copper	0.01 mg (<i>L. album</i>)
Iron	3.4 mg (<i>L. album</i>)
Magnesium	23 mg (<i>L. album</i>)

Manganese	0.3 mg (<i>L. album</i>)
Phosphorus	34 mg (<i>L. album</i>)
Potassium	411 mg (<i>L. album</i>)
Sodium	23 mg (<i>L. album</i>)
Chlorine	56 mg (<i>L. album</i>)

Green Deane's Itemized Plant Profile

IDENTIFICATION *Lamium amplexicaule*, multiple square stems, 6–18 inches, purplish near bottom, greenish near top, spreads in all directions from a taproot. Leaves opposite, hairy, scalloped; pink, purple, or red flowers, spotted on lower lip, no aroma, tiny purple hairs on upper part

TIME OF YEAR Springtime in temperate climes, February and March in warmer areas

RANGE Throughout North America

ENVIRONMENT Waste ground, lawns, cultivated fields, pastures, roadsides, railroads. Tolerates most soils and conditions. Can grow under shrubs where grass won't

METHOD OF PREPARATION Young leaves raw or cooked

Green Deane's Notes

Lamium are in the mint family, but they don't smell minty. A common species in North America is *L. amplexicaule*, familiarly known as henbit (or Henbit Dead Nettle) because chickens like it. Dead nettles are called "dead" because they do not sting.

Henbit can be confused with its close relative the Purple Dead Nettle, *L. purpureum*. The difference is in the leaves: Henbit's are heart-shaped, with big scalloped edges, and they grow along the entire stem. Purple Dead Nettle leaves are more triangular and grow in clumps. The white dead nettle, *L. album*, resembles both but has white blossoms.

Henbit is one of those great little edibles of spring. It's not there, then suddenly it is. I look forward to finding it every year. It shows just about the time you are tired of eating all the spicy wild mustards that start earlier. It's one of the few springtime greens that are not peppery. Long an esteemed vegetable, *Lamium* have a mild, sweet taste. The young leaves can be cooked as a potherb in addition to going raw into salads. Stems and flowers are edible too.

As an aside, I have a tenuous personal connection with *L. purpureum*. The *Purple* in "Purple Dead Nettle" derives from the Greek word *porphyra*, a sea creature that produced a purple dye. Ancient Romans made dye from porphyra, though it took thousands of the animals to generate enough to dye clothing. The ruins where the Greeks made that dye thousands of years ago still stand in Gythio, on the Mani Peninsula in the southern Peloponnese. They're beside the main road into town from Sparta but would be dismissed as trash if not for a small clearing and a sign. My ancestors are from that area. Who knows? Maybe one of them crushed some porphyra so an important person of the day could have a purple robe.

Hercules'-Club

Zanthoxylum clava-herculis

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES A potentially toxic tree—approach accordingly

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION A tree ranging from 17 to 50 feet tall with spiky growths on trunk and branches. Alternate leaves, pinnately compound, 5–8 inches, waxy or shiny on top, seven to nine lanceolate leaflets with rounded teeth. Each tiny flower turns into a small fruit that is a roundish, shelled seed with a pointed tip. Fruit dries and splits to reveal a shiny black seed.

TIME OF YEAR Inner bark available year-round; leaves also, except for winter; blooms in early spring; seeds, summer

RANGE The Gulf Coast states and Virginia

ENVIRONMENT Well-drained, dry, sandy spots; full sun or partial shade

METHOD OF PREPARATION Seed shells eaten like peppers, seeds heated with salt for flavoring

Green Deane's Notes

It's not the best cure for a toothache and it's not the best pepper in the world, but if you can't find a dentist or you need some spice, Hercules'-club will do.

So named because of its resemblance to Hercules' weapon of choice—a club that grew spikes—*Zanthoxylum clava-herculis* is covered with sharp, pointed projections (*clava* means club). It has been used to treat toothaches for thousands of years. All parts of the tree contain a natural kind of novocaine (an alkylamide similar to capsaicin), so you can use the leaves topically or the bark, leaves, or stem for pain relief. But use very small amounts; if you chew a leaf or bark, it'll likely be overpowering.

Szechuan pepper comes from the seed husks of a relative, *Zanthoxylum simulans*. You can eat the seed husks of Hercules'-club like peppers, though I don't really endorse that practice. The husks are a bit perfumy, and if you use the entire seed, the pepper is medicinal-tasting. You also could roast the seed shells with salt and use the mix as dip. People have used the seeds of

Z. clava-herculis or a closely related species, *Z. americanum* (prickly ash), like peppercorns.

What its leaves, bark, and roots smell like is a matter of debate: Some say lime, or bitter lime, but to me it smells just like Anbesol, the toothache medicine you can buy over-the-counter ... or Anbesol smells like Hercules'-club. However you describe it, the taste is intense and aromatic, almost like perfume. The odorous yellow roots of the Hercules'-club are not at all Herculean. They are weak, easily broken by hand.

Native Americans and settlers used Hercules'-club for a range of ailments in addition to toothache: a bark decoction treated venereal disease; inner bark was mixed with bear fat to make a poultice for ulcers and a salve for itches; ripe berries were steeped to make a spray for inflamed/sore throat and chest. The bark and leaves contain essential oils, primarily sabinene and limonene.

Surprisingly, Hercules'-club is a cousin to citrus trees. In addition to its spiky trunk, the tree has thorns on its leaf stems—which means children and other climbing animals leave it alone. One creature that is not deterred by the thorns is the giant swallowtail butterfly (*Papilio cresphontes*) in its larval stages.

Hibiscus

Hibiscus spp.

NOTABLE NUTRIENTS OR USES Potassium, calcium, iron

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced and/or native



Nutrition Notes

Flowers, per 100 grams

(fresh) 16 calories, 0.89 g carbohydrates, 2.68 g protein

(dried) 100 calories, 20 g carbohydrates

Vitamin C	48 mg (dried)
Calcium	67 mg (fresh), 520 mg (dried)
Iron	1.21 mg (fresh), 21.6 mg (dried)
Sodium	379 mg (fresh)

Nutrition Notes

Fruit (calyx), per 100 grams

353 calories, 86.3 g carbohydrates, 3.9 g fat, 3.9 g protein, 15.7 g fiber

Vitamin B1 (thiamine)	0.29 mg
Vitamin B2 (riboflavin)	0.49 mg
Vitamin B3 (niacin)	5.9 mg
Vitamin C	39 mg
Calcium	39 mg
Iron	17 mg
Phosphorus	265 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Large, trumpet-shaped flower with five petals; male and female parts of the flower are fused into one central spike; flowers yellow, white, pink, red, or purple. Leaves usually alternate, simple, oval or lance-shaped, often toothed or lobed.

TIME OF YEAR Can bloom year-round in warm areas, seasonally in colder climates

RANGE Some species are native to the US; others are introduced; cultivated widely.

ENVIRONMENT Full sun. Perennial hibiscus like moist soil that never dries out. Tropical hibiscus like well-drained moist soil.

METHOD OF PREPARATION Flowers raw, cooked, dried for tea

Green Deane's Notes

The most common type of mallow most people see these days is probably a hibiscus. Mallows are quite consistent in their signature flower—five separate petals with the male and female parts fused at the center like a frilly spike. A mallow is usually mucilaginous: Rub almost any part of the plant between your fingers, and it will be slimy or sticky.

The number of named and ornamental hibiscus is large. All have edible flowers. You can also eat the sepals, which form a whorl known as a calyx, the hibiscus's fruit. Whether the young leaves are edible is debatable and

likely varies from species to species. I usually put hibiscus flowers in salads. They don't have much flavor, but they add color and texture. Hibiscus blossoms are the usual source of coloring in herbal teas. They also can be stir-fried, and the blossoms will keep their color.

Hibiscus and their pretty relatives are very popular landscape shrubs. They come in all kinds of colors and thrive in a variety of climates. My mother's favorite flower in bitter-cold Maine was the rose of Sharon, *Hibiscus syriacus*—erroneously named as though it was native to Syria (just like the not-from-Syria *Asclepias syriaca*, the Common Milkweed, was). The closely related *Malvaviscus* genus includes *M. arboreus*, the wax mallow, and *M. penduliflorus*, the Mazapan (both also are called Turk's cap).

Hickory

Carya spp.

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, magnesium

SAFETY NOTES No known safety issues, but see preparation info below.

NATIVE STATUS Native



Nutrition Notes

Per ounce

184 calories, 18 g fat, 7.25 g carbohydrates, 3 g protein

Vitamin A	36.7 IU
Vitamin B1 (thiamine)	0.2 mg
Vitamin B3 (niacin)	0.3 mg
Vitamin B5 (pantothenic acid)	0.5 mg
Vitamin B6 (pyridoxine)	0.1 mg
Vitamin B9 (folic acid)	11 mcg
Vitamin C	0.6 mg
Calcium	17 mg
Iron	0.6 mg
Magnesium	48 mg
Manganese	1.3 mg
Phosphorus	94 mg

Potassium	122 mg
Selenium	2.3 mcg
Sodium	0.3 mg
Zinc	1.2 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Tree 30–150 feet tall, with vertically furrowed bark. Alternate leaves usually comprise two to four leaflets on the main stem plus three leaflets splayed at end, with terminal leaflet often the largest. Nuts round or oval, with four seams; nuts are green when on the tree.

TIME OF YEAR Tree usually drops nuts starting in September or October.

RANGE Eastern half of the US

ENVIRONMENT Varies from dry scrub to swamps where roots are underwater

METHOD OF PREPARATION Raw or roasted, made into meal or flour

Green Deane's Notes

Hickories are in the *Carya* genus, within the walnut family. There are about a dozen species in the United States. As a forager, you really don't have to tell them apart any more than you do oaks. Like oaks (and true pines), hickories have no poisonous lookalikes, so you can eat any hickory nut you find. Hickory nuts are high in omega-6 acids and also have a respectable amount of omega-3s.

Some hickories are esteemed, used in ice cream and other foods, but some are astringent—which may get them listed as “not edible.” They *are* edible, but you may need to leach out the bitterness. You accomplish that by any of the methods used to leach acorns: grinding and soaking, boiling, blending with water and straining; see the first entry in this book for directions.

Two of those bitter *Carya* are the Pignut Hickory, *Carya glabra* (when cut, the nut resembles the front of a pig's snout), and the water hickory, *Carya*

aquatica, which usually grows in damp areas (and is the tallest of all hickories). *C. aquatica* is the hickory wood used in barbecuing and smoking to flavor foods. Other *Carya* include *C. floridana*, *C. tomentosa*, and *C. illinoensis*, the well-known pecan (see separate entry).

The big issue with hickories is how to get at the nutmeat. The Natives just pulverized the entire nut, added water, then filtered out the particulates, leaving a milk called pawcohiccora—a word that was shortened and adapted to eventually become “hickory.”

You can buy a motorized appliance that does the work or shell them by hand. If opting for the latter, the first step is to remove the husks, if they are not off already. Then wash the nuts in their shells, allowing them to air-dry. To open dry nuts, lay each on its narrowest side and hit the seam with a hammer about a third of the way back from the stem end. It takes some practice. Second method: If you soak the nuts for an hour or more and work with them wet, they will open without shattering. Don't try to use a lever-type nutcracker. The nuts will be too hard or, if wet, way too soft for that kind of nutcracker to work.

Use like walnuts. Nutmeat is usually removed and eaten raw, but it can be ground and used like breading.

Highbush Cranberry

Viburnum trilobum

NOTABLE NUTRIENTS OR USES Vitamin C, antioxidants

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Deciduous shrub to 12 feet. Bark gray, rough, scaly. Stems arch, dense; twigs reddish-brown. Leaves opposite, palmate, three-lobed, 5 inches long and nearly as wide, rounded base, serrated edges. Flowers white, unpleasant aroma, 4 inches across, in corymbs with a ring of large, sterile blossoms surrounding a center of small, fertile ones. Fruit an oblong red drupe, with one flat, white seed that begins to appear when shrub's around 5 years old.

Nutrition Notes: *V. edule*

Per 100 grams

39 calories, 0.4 g fat, 9.4 g carbohydrates, 0.1 g protein 3.8 g fiber

Vitamin A	6 RA
Vitamin C	13.4 mg
Calcium	24 mg
Copper	0.1 mg
Iron	0.3 mg
Magnesium	11 mg
Manganese	0.1 mg
Phosphorus	23 mg
Sodium	0.6 mg
Zinc	0.1 mg

TIME OF YEAR Flowers in late spring; fruit in late summer, persisting into fall and winter

RANGE Northern United States plus New Mexico

ENVIRONMENT Full sun or partial shade; moist woods and meadows; well-drained soil. Can be trained to be a hedge, favored for colorful foliage both in the spring and fall.

METHOD OF PREPARATION Berries raw, cooked, or used in jelly, jam, syrup

Green Deane's Notes

Living in Florida, I miss highbush cranberries. They are hearty and familiar fare in northern climes.

Viburnum trilobum has at least one other botanical name, *Viburnum opulus* var. *americanum*, and several other common names, including pimbina, mooseberry, American cranberry bush, and squashberry. Around the world, at least 10 *Viburnum* and several cultivars are used for food or tea, among them *V. alnifolium*, *V. cassinoides*, *V. edule*, *V. lentago*, *V. nudum*, *V. opulus*, *V. opulus xanthocarpum*, *V. prunifolium*, and *V. setigerum*.

The highbush cranberry is not really a cranberry (genus *Vaccinium*) but is a cousin of the elderberry. Both are in the honeysuckle family and have a

musky odor. As one might suspect from the misnomer, the highbush cranberry has tart fruit. Bradford Angier, a renowned Canada-based forager, wrote that it required a “conditioned palate” to appreciate highbush cranberries. The fruit persists into the winter because it is not a preferred food of birds, who like it better after it softens and ferments.

The sour berries can be eaten raw or cooked in a variety of ways (from drying to using in batter). Generally, native North American species taste better than imported European species (this holds true for elderberries as well). In the early fall, highbush cranberries can be bitter, but they still make excellent jelly and jam (they have a lot of pectin), pancake syrup, or sauce. I would say they are best collected before a frost. The flowers can be added to pancake mix or other batter, or made into fritters.

One 100-gram serving of *V. trilobum* provides half your daily need of vitamin C. It has significant antioxidant activity, may lower inflammation, and can improve glucose uptake. Researchers have suggested it might have some use in the treatment of diabetes and metabolic syndrome.

Honeysuckle

Lonicera spp.

NOTABLE NUTRIENTS OR USES No nutritional information available.

SAFETY NOTES Some species or parts are toxic. See below.

NATIVE STATUS Introduced and/or native



Green Deane's Itemized Plant Profile

IDENTIFICATION *Lonicera japonica*, twining, trailing vine to 80 feet; sometimes rooting at nodes; a shade of red, brown, or purple; younger parts hairy; often with thin, woody bark on the lower stems. Leaves opposite, may or may not have stems or without, no teeth, ovate/oblong, pointed tip, rounded at base. Flowers white, yellow when older, tube-shaped, upper lip four-lobed, bottom lip single-lobed. Fruit are round, black, inedible berries.

TIME OF YEAR Flowers May to July in northern climes, nearly year-round where warm

RANGE Native to the northern temperate regions of both hemispheres; can be found in North Africa, southern Asia, and the Himalayas

ENVIRONMENT Open woods, thickets, roadsides, railroads, landscaping

METHOD OF PREPARATION Boil young leaves, sip nectar from flowers.

Green Deane's Notes

The honeysuckle genus, *Lonicera*, is iffy for foragers. It has edible members and toxic members, and the edible members may have toxic parts. Taste is not a measure of edibility. Some *Lonicera* have delicious berries that are toxic, and some have unpalatable berries that are safe. Some species are tasty, some can stop your heart. So you have to be sure which one you have and which parts of it are usable.

There are about 180 species of honeysuckle, and they are quite consistent in appearance: Leaves are opposite, simple, oval; flowers sweetly scented, bell-shaped. The berries can be red, blue, or black, usually containing several seeds. Most honeysuckles lose their leaves in the fall, but some are evergreen.

The honeysuckle most of us grew up with, picking the flowers for a taste of sweetness, is the Japanese honeysuckle, *L. japonica*. You can boil the young leaves to eat, and suck nectar off the ends of the flowers. *L. villosa*, the Mountain Fly Honeysuckle (sometimes called the Waterberry), has edible berries.

You can also eat the fruit of *L. angustifolia*, *L. caprifolium*, *L. chrysantha*, *L. ciliosa*, *L. hispidula*, *L. involucrata*, *L. kamtschatica*, and *L. utahensis*. Flowers from *L. affinis* are edible, *L. caprifolium* flowers can flavor tea, and you can consume nectar from *L. ciliosa* and *L. periclymenum*. Among the honeysuckles that come with a “proceed with caution” warning regarding their edibility are *L. canadensis* (fruit may be edible, or not), *L. henryi* (flowers, leaves, stems), and *L. venulosa* (fruit).

Hornbeam

Carpinus caroliniana

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Small, nearly shrubby, but muscly tree to 25 feet tall, with a rounded crown and twisted trunk. Leaves alternate, simple, elliptical, 3–5 inches long, smooth green, paler on undersides, pinnately veined, with long and short teeth and tip that tapers to a sharp point. Seeds just a quarter to a third of an inch big: ribbed nutlets on three-lobed, slightly folded leafy bracts, clustered on a long, hanging stalk. Wind can disperse seeds up to 65 feet from the tree.

TIME OF YEAR Flowers March to May, seeds late August to winter

RANGE Eastern United States and Texas

ENVIRONMENT Moist areas of established forests, occasionally fields

METHOD OF PREPARATION Nutlets raw, roasted, boiled, or ground

Green Deane's Notes

British outdoors author Ray Mears must have been thinking of the hornbeam when he said a forager mustn't pass up food, no matter how meager. This wild edible does not produce the best-tasting or most plentiful food.

Where I grew up in New England, *Carpinus caroliniana* was called ironwood or hornbeam. The full name according to the USDA is American hornbeam. In the South, you hear it called the blue beech or water beech. It is not a beech, but its leaves—which turn orange red in the fall—can remind one of a beech.

Related to birches and filberts, the hornbeam has its own special look: sinewy, taut, buff. As if it goes to the forest gym twice a day. Hence its other common name, Musclewood. Strong and dense, it has been used to make handles, poles, bowls, and dishes because it does not crack or split (or have any flavor). It also makes a good firewood.

The edible part is the seed, a small nutlet. There are some 33,000 of them to a pound (as for your pounds, 100 grams of the hornbeam seeds pack 462 calories). Just rub the nutlets between your hands to free them from their papery bracts. Then you can eat them raw, roasted, or boiled. Their taste is neither great nor awful. They can be ground to add to flours or other food. Mears reported that the sprouts are also edible.

Every three to five years a hornbeam tree will produce a larger crop than usual. Heavily seeding trees are typically between 25 and 50 years old. The bark has some medicinal uses, and the leaves have been employed as an astringent. Hornbeam seeds are an important food for squirrels and

consumed by many birds. The hornbeam is heavily used by beavers and is a larval host of several butterfly species.

Horsemint

Monarda punctata

NOTABLE NUTRIENTS OR USES No nutritional information available; flavonoids

SAFETY NOTES If you use horsemint to make tea, make it weak because of thymol, which is potentially dangerous in larger amounts. See notes below.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Multibranched herb that may be woody, shrubby, or gangly, tends to grow in small colonies. Opposite leaves and square stems, both hairy; leaves smell like oregano. Small tube flowers pale yellow with purple spots, arranged in showy heads of pink or lavender bracts.

TIME OF YEAR Flowers June to October, depending on location, in North; possibly year-round in southern areas

RANGE Eastern North America

ENVIRONMENT Likes moist but well-drained soil and sunny conditions, but can survive on rainwater in old fields and on roadsides

METHOD OF PREPARATION Leaves and flowers for tea

Green Deane's Notes

Horsemint, like most *Monarda*, makes a nice tea, but it has to be weak. The major oil in horsemint and many *Monarda* is thymol. Internally, it can be extremely relaxing. A friend of mine told me she made a tea out of *one* horsemint leaf and was as sleepy as if she had taken a dose of nighttime cold medicine.

Stronger horsemint brews can serve as herbal medicine for colds or the flu, but for just drinking, you *must* make horsemint tea weak because thymol can be fatal in large amounts. Before the OxyContin era, it was a commonly abused depressant. Externally it's an antiseptic and vermifuge (kills mites). If thymol were created today, it would be a prescription drug. It has also been used as a cough syrup ingredient and additive for cigarettes to “improve” their flavor.

You use horsemint's leaves and flowers to make tea. The leaves can reportedly also be chopped up and added to salads for more flavor. You also can use the leaves around your home for a pleasant scent. In the wild, the horsemint—or Spotted Bee Balm—is a pretty plant to spot while foraging. It's one of those plants you may never notice until you've learned to recognize it; then you see it regularly. There are about 20 other *Monarda* in the United States. In Maine I grew up with Oswego tea, from *M. punctata*'s close relative *M. didyma*. (“Oswego” shows up in quite a few place names around the country.)

Of all the mints, horsemint has the highest amount of thymol. It is one of two chemicals in horsemint—the other being carvacrol—that prevent the

breakdown of acetylcholine, the stuff that makes memory possible (reduction in acetylcholine is associated with Alzheimer's disease). Thymol and carvacrol are not as rough on the liver as tacrine hydrochloride, the drug typically prescribed to inhibit the breakdown of acetylcholine, according to experts. Research on *M. didyma* showed flavonoids, including rutin, quercetin, hyperoside, quercitrin, and luteolin, in the leaves and flowers.

Horseradish

Armoracia rusticana

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, sodium, potassium, calcium

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION Large, coarse green basal leaves grow out of the white root, followed by small white four-petaled flowers in terminal racemes. Has long, narrow seedpods (siliques), like many mustards.



Nutrition Notes

Per 100 grams

Leaves: 35 calories, 7.02 g carbohydrates, 3.51 g protein, 1.8 g fiber
Roots: 48 calories, 0.69 g fat, 11.29 g carbohydrates, 1.18 g protein, 3.3 g fiber

Vitamin A	3947 IU (leaves)
Vitamin B1 (thiamine)	<0.01 mg (roots)
Vitamin B2 (riboflavin)	0.02 mg (roots)
Vitamin B3 (niacin)	0.39 mg (roots)
Vitamin B9 (folic acid)	57 mcg (roots)
Vitamin C	15.8 mg (leaves), 24.9 mg (roots)
Vitamin E	0.01 mg (roots)
Vitamin K	1.3 mcg (roots)
Calcium	105 mg (leaves), 56 mg (roots)
Copper	0.06 mg (roots)
Iron	1.26 mg (leaves), 0.42 mg (roots)
Magnesium	27 mg (roots)
Potassium	246 mg (roots)
Selenium	2.8 mcg (roots)
Sodium	420 mg (roots)
Zinc	0.83 mg (roots)
Choline	6.5 mg (roots)
Lutein and zeaxanthin	10 mcg (roots)

TIME OF YEAR Sprouts in spring, roots in fall.

RANGE Introduced from Russia and Ukraine; cultivated widely

ENVIRONMENT Can tolerate cold

METHOD OF PREPARATION Leaves raw or cooked, roots made into condiment or sauce

Green Deane's Notes

Late one summer in the mid-1990s, I drove my mother to Waterville, Quebec, to visit her cousin Beula Knutson. A half a century had passed since they last met, and they had a lot to talk about. I took the opportunity to marvel at Beula's gigantic horseradish in her front yard. It was very healthy and about 6 feet tall, the largest I'd ever seen.

Another time, while rummaging through old science journals, I found references to a 1951 article on the preparation of a vitamin C drink from horseradish leaves. I have since learned that fresh young horseradish leaves can have more than five times your daily need of vitamin C. As the leaves age, they lose vitamin C, but mature leaves generally meet your recommended daily allowance.

Young leaves can be eaten raw. Older leaves are better cooked, the way you'd cook spinach. The roots are what get chopped up and made into a spicy condiment. The chemicals that cause horseradish's heat only do so when they are forced together by crushing; in their unprocessed state, they are in separate cells, not mixed together, and don't produce the heat. So you could say that structurally horseradish has something in common with certain military missiles.

Horseweed

Conyza canadensis

NOTABLE NUTRIENTS OR USES Calcium, phosphorus, potassium

SAFETY NOTES See preparation notes below.

NATIVE STATUS Native to North America



Green Deane's Itemized Plant Profile

IDENTIFICATION Annual herb 1–7 feet tall, unbranched except for flowering stems near top, often forms colonies. Central stem ridged, covered with long white hairs; leaves alternate around this stem, appearing whorled. Leaves 3–4 inches long, oblanceolate, a few teeth toward outer tips, fine white hairs along edge. Smaller leaves near the blossoms more linear and less likely to have teeth. Many composite small blossoms, lasting several weeks. Leaves aromatic when crushed. Do not confuse *Conyza canadensis* with *C. sumatrensis* (Tall Fleabane) and *C. bonariensis* (Hairy Fleabane), which have hairy bracts; *C. canadensis* has hairless or nearly hairless bracts.

Nutrition Notes

Per 100 grams

1.8 g fat, 75.1 g carbohydrates, 14.9 g protein, 26.1 g fiber

Calcium	1010 mg
Phosphorus	280 mg
Potassium	2610 mg

TIME OF YEAR Summer to fall

RANGE Most of North America; naturalized in Eurasia and Australia

ENVIRONMENT Prefers full sun and good, well-watered soil but can grow nearly anywhere and is drought-resistant

METHOD OF PREPARATION Leaves and shoots boiled, leaves dried

Green Deane's Notes

Conyza will light your fire!

If you've ever made fire by hand, you know that having the right materials is absolutely essential to generating enough friction. Stems of *Conyza canadensis* make good drills for starting fire, they are the best local material for a drill when making fire with friction along with a palm frond base.

Choose tall, straight ones, let them dry, remove the leaves, and you're ready. Too fragile to be used with a bow, horseweed plants work very well using the hand method of fire making. Add to that medicinal and culinary uses, and horseweed deserves a place among the worthwhile weeds we should know about.

An essential oil from *Conyza* leaves is used to flavor candy, condiments, and soda. A 2009 study said the plant has excellent antioxidant activity. Horseweed has also been called Fleabane because the leaves put in pets' beds help get rid of fleas (it also has another botanical name, *Erigeron canadensis*). Native Americans made tea from horseweed leaves to treat dysentery and tea from the boiled roots for menstrual cramps. It's a diuretic and can make you sweat.

As for food, young leafy seedlings and leaves can be eaten after boiling. Dried leaves can be used as a seasoning, with a flavor similar to tarragon.

Huckleberry

Gaylussacia spp.

NOTABLE NUTRIENTS OR USES Calcium, vitamin C

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Nutrition Notes: Alaskan huckleberries

Per 100 grams

37 calories, 0.1 g fat, 8.7 g carbohydrates, 0.4 g protein, 3.0 g fiber

Vitamin A	79 IU
Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.03 mg
Vitamin B3 (niacin)	0.3 mg
Vitamin C	2.8 mg
Calcium	15 mg
Iron	0.3 mg
Sodium	10 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Colony-forming shrub. *Gaylussacia baccata*, 1–2 feet high; *G. dumosa*, seldom taller than 2 feet; *G. frondosa*, to about 5 feet; *G. mosieri*, to 3 feet. Look for microscopic gold dots on undersides of leaves. Flowers bell-shaped; fruit black, purplish black, or blue berries. *G. baccata* may have few or many branches, *G. frondosa* often scraggly, *G. mosieri* distinguished by long hairs on twigs.

TIME OF YEAR Blooms in late May, fruit in summer

RANGE North America

ENVIRONMENT In northern areas, bogs and wet sandy soils; in southern areas, dry or moist sands

METHOD OF PREPARATION Use like blueberries.

Green Deane's Notes

The huckleberry looks like a black blueberry and has exactly 10 seeds inside. There are blue huckleberries, but they, too, have 10 seeds. Blueberries are true berries, whereas huckleberries are drupes—although most drupes have only one seed (like an olive), not 10. The stony seeds make huckleberries crunchier. Huckleberries are often sweeter than blueberries, and they have more calcium. Both are in the heath family, which has few toxic species.

In addition to *Gaylussacia baccata*, huckleberry varieties include *G. dumosa*, *G. frondosa*, and *G. mosieri*. Huckleberries are a favorite food of bears—they constitute up to one third of the grizzly bear's diet—and bears will travel great distances to find them. So if you go huckleberry picking, be aware that you may be in some bear's favorite patch.

Native tribes made rakes of salmon backbones to strip huckleberries off bushes. They dried the berries in the sun or smoked them, then mashed

them into cakes and wrapped those in leaves or bark for storage. You can do anything with huckleberries that you would with blueberries: pie, jam, etc. And, of course, just pick and eat them fresh.

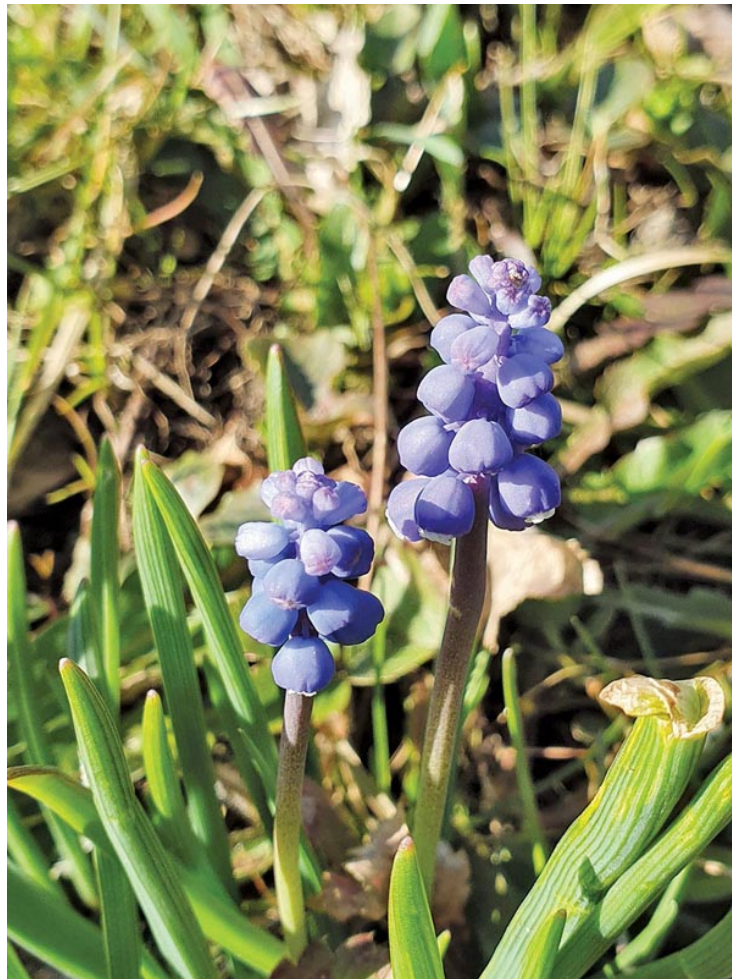
Hyacinth

Muscari spp.

NOTABLE NUTRIENTS OR USES Vitamin C, calcium, phosphorus, carbohydrates

SAFETY NOTES See preparation notes below; also, be aware that the familiar *hyacinth* plants are a different genus. The below applies to *Muscari* species

NATIVE STATUS Introduced



Nutrition Notes: *Muscari comosum*

Fresh bulbs, per 100 grams

138 calories, 0.8 g fat, 19.19 g carbohydrates, 1.05 g protein, 0.8 g fiber

Vitamin C	23.2 mg
Calcium	163 mg
Phosphorus	110 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Muscari comosum*, flower stalk up to 2 feet tall, pale brown urn-shaped fertile flowers on lower half, blue tassel-shaped flowers on upper half pollinated by bees. *M. neglectum*, about a foot high, grows in clumps. Raceme of urn-shaped flowers with dark-blue lower blossoms and bright-blue upper blossoms. *M. botryoides*, urn-shaped blue flowers in a dense, terminal raceme; leaves basal, linear, hairless, grooved, or U-shaped in cross section.

TIME OF YEAR Flowers in midspring

RANGE Nationwide except high plains and desert southwest states

ENVIRONMENT Does best in well-drained soil and full sun.

METHOD OF PREPARATION Boiling, pickling

Green Deane's Notes

The three blue *Muscari* species—tassel hyacinth, Musk Hyacinth, and grape hyacinth—are popular for eating in Europe but still relatively unknown in North America. You can cook and consume them the same ways those on the Continent do.

The tassel hyacinth, *Muscari comosum* (aka *Leopoldia comosa*), is used extensively in Italian and Greek cooking. The bulbs are boiled, then pickled or preserved in oil. Bulbs of the Musk (or Starch Grape) Hyacinth, *Muscari neglectum*, are boiled; blossoms are used as flavoring. Blossoms and buds

of the grape hyacinth, *Muscari botryoides*, are pickled. Hyacinth bulbs are slightly bitter because of saponins—which are basically plant soap—so you may want to change the water at least once when boiling.

Hydrilla

Hydrilla verticillata

NOTABLE NUTRIENTS OR USES Vitamin A, calcium, potassium, magnesium, iron

SAFETY NOTES Beware hydrilla with blue-green algae on leaves. See below for preparation tips.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Submersed plant that can form dense mats. Slender, branched stems up to 25 feet long. Small leaves straplike and pointed, with reddish midribs, growing in whorls of four to eight around the stem. Tiny white flowers on long stalks and 0.25-inch turions (buds) at leaf axils. Tubers attached to roots are yellowish, potato-like, 0.5 inch long and 0.5 inch wide. To distinguish it from similar-looking *Elodea* and *Egeria*, pull the plant through your hand: *Hydrilla* will feel scratchy, while *Edodea* and *Egeria* are smooth.

TIME OF YEAR Available all year in warm climates

RANGE Asia and Africa; northern Europe; central America; Australia

ENVIRONMENT Freshwater lakes, marshes, rivers, springs, ditches, tidal zones with no higher than 7% salinity. Can grow in a few inches of water or in water more than 20 feet deep, and in dark areas.

METHOD OF PREPARATION Dried and powdered

Nutrition Notes

Per 10.5 grams

27 calories, 0.2 g fat, 5.4 g carbohydrates, 1.2 g protein, 4 g fiber

Vitamin A	19593 IU
Vitamin B1 (thiamine)	26 mg
Vitamin B2 (riboflavin)	0.08 mg
Vitamin B3 (niacin)	5 mg
Vitamin B5 (pantothenic acid)	11 mg
Vitamin B6 (pyridoxine)	36 mg
Vitamin B12 (cyanocobalamin)	1.05 mg
Calcium	1460 mg
Copper	0.43 mg
Iron	36.8 mg
Magnesium	76.13 mg
Phosphorus	29.74 mg
Potassium	244.65 mg
Zinc	6.3 mg
Cobalt	0.22 mg
Molybdenum	14.7 mcg

Green Deane's Notes

Hydrilla is a Eurasian weed that entered the Western Hemisphere sometime around 1951 or 1952, probably through an aquarium dealer in Florida who imported live hydrilla from Sri Lanka. He dumped six bundles in a canal near his business. For more than a decade, no one knew it was hydrilla. It was mistakenly called *Elodea canadensis* when it's actually *Hydrilla*

verticillata, the only species in its monotypic genus. The USDA uses the common name water thyme.

Within 10 years of its discovery, hydrilla became the most troublesome aquatic weed in the state. It can expand 1,000% a year, growing an inch a day. Florida currently spends about \$30 million annually trying to control it.

You can buy hydrilla as a nutritional powder to add to smoothies, soups, and stews. That hydrilla in the health food store is the same hydrilla that clogs lakes around the world. Can you take it out of the lake, cook it up, and chomp it down? I don't know of anyone doing that.

In theory there should be no problem with eating hydrilla (beyond the usual risk as an aquatic plant that it's absorbed pollutants). But it's not cooked like greens because ... well, edible does not mean palatable. The plant is tough and prickly. Edibility of the tubers is totally unknown to me. The entire plant above the roots could be dried for powder. Be aware, however, that in addition to the usual risks that come with aquatic plants (absorbed pollutants), it can also serve as a substrate for toxic cyanobacteria. This is why you should examine it for any blue-green algae on the leaves. Don't consume it if you find some.

In north Florida they raise hydrilla in an isolated lake, sterilize it with pure water and ozone treatment, low-temperature dry it, powder it, and sell it to you. The earthy-flavored powder is high in calcium. When investigated as animal food, hydrilla had 16% more available dry matter for fodder than cattails and no bad chemicals in it. In one study, cows that were fed hydrilla gave 20% more milk and chickens, 14% more eggs.

Jack-in-the-Pulpit

Arisaema triphyllum

NOTABLE NUTRIENTS OR USES No nutritional information available.

SAFETY NOTES Corms must be dried before cooking to neutralize calcium oxalates. Eaten raw, they will burn the mouth and can cause nonfatal poisoning. Possible effects of consuming calcium oxalates include swelling of the throat, digestive upset, convulsion, coma, liver and kidney damage.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial with one or two stems, each with three long, ovate leaves. Grows every season from a corm, which is walnut-size or larger and may have ridges. Flower is a flaplike spathe, or “pulpit”—green with white, brown or purple stripes—that curves around a rod-shaped spadix, or “Jack.” Fruit are tiny berries that cluster on spadix, green at first, scarlet red later.



TIME OF YEAR Available year-round, but gather in fall, early spring, or when dormant.

RANGE Eastern Canada and the eastern US

ENVIRONMENT Moist forests, shade, damp but not waterlogged soil

METHOD OF PREPARATION Must be thoroughly dried, then can be eaten or ground for flour

Green Deane's Notes

We've heard of a jack-of-all-trades, a jacktar (a sailor), steeplejacks (laborers), jack-o'-lanterns, and, of course, the occasional jackass. In the name of this plant, *Jack* refers to the spadix, a cream-colored rod-shaped growth surrounded by a type of bract called a spathe, which is the pulpit that Jack's in.

You may have a jack-in-the-pulpit that's actually a Jill. If the spadix is covered with a cluster of small berries, the plant is female. A male would not have it. If the plant has one stem and three leaves, it's usually male; two stems and six leaves, female. Most male plants are under 14 inches tall. The plants over 14 inches tend to be female.

The sex matters to foragers because the edible part of the plant, the corm, differs between he and she. A corm is the bulblike base of the stem and often has a papery skin, like an onion. In most cases, a jack-in-the-pulpit corm packed with nutrients will produce a spathe for a female flower; a corm that is young or depleted will produce a spathe for a male flower. This means that generally "Jack" has bigger corms toward the end of the season, "Jill" has larger corms at the start of the season. So you want to dig up corms from female plants early in the season and those from male plants later.

Never eat a raw jack-in-the-pulpit corm. You'd probably get a burning or stinging sensation in your mouth and could end up with kidney stones. The offending chemicals are needle-shaped calcium oxalate crystals called raphides—which must be neutralized by heating. But only dry heat degrades them efficiently. Cut the corm into thin slices and leave them to air-dry for three months (somewhere indoors that's not damp or humid, but out in the sun is even better). Alternatively, you can dry them in a dehydrator or oven no higher than 170°F over the course of about five days.

Scores of websites that copy one another say boiling corms makes them edible. In my experience, they'd have to be boiled in excess of 24 hours, and then would just be approaching edibility—they might still burn your mouth. Microwaving them can have varied results: I've made some sliced corms edible after 3 minutes in the microwave, but others still burned the mouth after 5 minutes. They go from edible to incinerated fast in the microwave—10 minutes would be too much. Air-drying produces the sweetest-tasting corms, anyway (nuking gives them a nutty flavor).

Once corms are properly cleared of the acids, you can eat the dry slices or grind them into flour. But you need to test them first because the burning effect may not occur immediately. After preparing the corm slices, chew a quarter-inch-square piece on one side of your mouth for a full minute, spit it out, and then wait at least 10 minutes. If that side of your mouth, tongue, and lips don't burn, repeat with a bigger piece; if there's no burn then, they're good to go. If you do get the burning sensation, it is temporary, lasting up to a half an hour or so, and can be mitigated with lemon or lime juice.

Jack-in-the-pulpit berries are listed as toxic, probably for the same reason the corms are. Some references say the dried berries are edible, but I have not tried them dried or fresh. Wild turkeys and wood thrushes eat the ripe red berries. Those berries, by the way, were used by the Natives to make red

dye. Sap from the plant also apparently can have an analgesic (painkiller) effect.

Jerusalem Artichoke

Helianthus tuberosus

NOTABLE NUTRIENTS OR USES Potassium, magnesium, calcium

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Large multibranched plant to 10 feet tall; rough, ovate leaves, broadest below the middle, 5–10 inches long; yellow flowers 3–4 inches across with 10–20 petals; tubers are lumpy, tan, and hard to clean.

TIME OF YEAR Showy blossoms in late summer and early fall. Collect tubers two weeks after flowers fade.

RANGE All of North America except Arizona, Nevada, and New Mexico

ENVIRONMENT Almost any soil, but softer and fertile is better

Nutrition Notes

Per 100 grams

73 calories, 17.44 g carbohydrates, 2 g protein, 1.6 g fiber

Vitamin A	20 IU
Vitamin B1 (thiamine)	0.2 mg
Vitamin B2 (riboflavin)	0.06 mg
Vitamin B3 (niacin)	1.3 mg
Vitamin B5 (pantothenic acid)	0.4 mg
Vitamin B6 (pyridoxine)	0.08 mg
Vitamin B9 (folic acid)	13 mcg
Vitamin C	4 mg
Vitamin E	0.19 mg
Vitamin K	4 mg
Calcium	14 mg
Copper	0.14 mg
Iron	3.4 mg
Magnesium	17 mg
Manganese	0.06 mg
Phosphorus	78 mg
Potassium	429 mg
Selenium	0.7 mcg
Sodium	4 mg
Zinc	0.12 mg
Choline	30 mg

METHOD OF PREPARATION Raw, boiled, fried, roasted, pickled

Green Deane's Notes

Jerusalem artichoke is the name of both the plant known scientifically as *Helianthus tuberosus* and of its one edible part, the tuber. It is in the sunflower family and is neither from Jerusalem nor an artichoke. (They taste more like potatoes.) When the plant was “discovered” by Europeans, they called it *girasole*, an Italian word that means “turning to the sun,” which some plants in the family do (it’s also Italian for “sunflower”). Over time, *girasole* got mangled into *Jerusalem*. The *artichoke* part of the name comes from the taste of its tuber.

A more appropriate—and shorter name—for Jerusalem artichokes is the more recently coined sunchokes. When I grew sunchokes, I learned two things. One, they don’t like nematodes. If your soil has those parasitic worms, you have to get rid of them in order to grow because they affect root production. I fought, ’tode to ’tode, by releasing predatory nematodes. Second, the best place to store the roots after they die back in the fall is in the ground. Creatures, including opossums, leave them alone.

Jerusalem artichokes are pretty easy to raise. You can even grow them in a pot, planting ones you buy at the grocery store. They can, however, be tedious to clean—and they can overcook quickly. They are excellent raw and grated into salads or lightly boiled, as you would potatoes. You can also make French fries with them, or a creamy soup. The ’chokes can be pickled, and they can be roasted, but eat them immediately after cooking as they grow mushy within a few minutes. In Europe, sunchokes are used in making a spirit called topinambur, or rossler. Jerusalem artichokes contain a carbohydrate called inulin, which diabetics can consume without it affecting their blood sugar.

Jewels of Opar

Talinum paniculatum

NOTABLE NUTRIENTS OR USES Beta-carotene, potassium

SAFETY NOTES No known safety issues

NATIVE STATUS Supposedly native to warmer areas of the United States



Green Deane's Itemized Plant Profile

IDENTIFICATION Skinny succulent plant with flat, glossy, mucilaginous green leaves to 4 inches long, wispy pink flowers, and dark-red fruit. Roots are long and orange.

TIME OF YEAR Year-round

RANGE The southern United States

ENVIRONMENT Moist areas, well-drained soil, warm weather. Intolerant of frost, prefers full sun but can grow in partial shade.

METHOD OF PREPARATION Raw or cooked in stews and soups

Nutrition Notes: *A. alnifolia*

Per 100 grams

99 calories, 1.2 g fat, 21.4 g carbohydrates, 0.7 g protein, 6.4 g fiber

Vitamin A	86 RE
Vitamin B3 (niacin)	0.3 mg
Vitamin C	10.9 mg
Calcium	69 mg
Copper	0.4 mg
Iron	0.5 mg
Magnesium	26 mg
Manganese	2.2 mg
Phosphorus	40 mg
Selenium	0.6 mg
Zinc	.4 mg

Green Deane's Notes

Learning wild edibles has a sense of discovery to it. It's treasure hunting for adults. One day a friend showed me an edible in her yard with a strange name: Jewels of Opar. If that sounds like something out of an Indiana Jones movie, you're close. It's from a 1916 novel with the Indiana Jones of his day: *Tarzan and the Jewels of Opar*. In the book—the fifth in Edgar Rice Burroughs's series—those title objects are actually jewels.

Jewels of Opar is related to purslane and nicknamed pink baby's breath, both of which should give you some idea what it looks like, and why it's popular as an ornamental. The edibles encyclopedia *Cornucopia II* calls it the caruru or flameflower. Other references use the common name Javanese Ginger and say the long orange roots can, like ginger, be ground or grated for use as a flavoring.

The most common food use is as a green. Shoots and leaves can be eaten raw in salads or cooked in soups, stews, and similar dishes. The species is

somewhat tart because of oxalic acid.

Juneberry

Amelanchier arborea, *Amelanchier alnifolia*

NOTABLE NUTRIENTS OR USES Fiber, calcium, phosphorus, magnesium

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Nutrition Notes: *A. alnifolia*

Per 100 grams

99 calories, 1.2 g fat, 21.4 g carbohydrates, 0.7 g protein, 6.4 g fiber

Vitamin A	86 RE
Vitamin B3 (niacin)	0.3 mg
Vitamin C	10.9 mg
Calcium	69 mg
Copper	0.4 mg
Iron	0.5 mg
Magnesium	26 mg
Manganese	2.2 mg
Phosphorus	40 mg
Selenium	0.6 mg
Zinc	.4 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Small tree or large multibranched shrub, 20–50 feet, with rounded crown and arching, spreading branches. Leaves simple, alternate, oblong, 1–3 inches long, serrated, downy underneath, smoother above, silvery-gray and fuzzy when emerging, dark green in summer, yellow to orange to red in fall. Dainty, five-petaled white flowers hang in elegant clusters. Fruit a berry-like pome, pendulous, ripens from green to red to purplish black, with red teardrop-shaped seed.

TIME OF YEAR Flowers bloom and berries ripen in spring.

RANGE *Amelanchier alnifolia*, nationwide

ENVIRONMENT Full sun or light shade and moist, well-drained, acidic soil. Often an understory tree near stream banks.

METHOD OF PREPARATION Fresh, dried, or cooked

Green Deane's Notes

Juneberries are as American as apple pie. More so, in fact. Juneberries are native; cultivated apples are not. When Europeans arrived in the New

World, the only apples around were sour crab apples—but there were plenty of palatable Juneberries.

Juneberries are a close relative of apples, not of blueberries, which they resemble in color, shape, and size. They have that name because in many places the fruit ripens in June, usually the first of the new season for those weary of winter fare. Juneberries are also known as serviceberries, and *A. arborea* is sometimes called the sarvis tree. The word “sarvis” may have been an Appalachian pronunciation of “service,” and that word purportedly got attached to the species because in Appalachia it was the only tree blossoming when it came time to bury in the thawed ground of spring those who had died during the winter—to have *services* for them, in other words. Other regional names for the tree are shadbush, shadblow, shadwood (because it bloomed when the shad were running), sugarplum, and wild plum.

Amelanchier arborea is found in the eastern half of United States; its western counterpart is *Amelanchier alnifolia*, aka the Saskatoon Serviceberry. Other *Amelanchier* species that have been used for food include *A. bartramiana*, *A. canadensis*, *A. intermedia*, *A. laevis*, *A. lamarckii*, *A. pallida*, *A. sanguinea*, *A. spicata*, and *A. utahensis*.

Juneberries were an ingredient in pemmican, a staple of northern Native tribes and a main ration for pioneers and traders that was made of powdered meat mixed with fat and dried berries. Today, opinions vary on whether Juneberries are better fresh, dried, or cooked. It is a matter of personal taste. Like other berries, they can be made into pies, jelly, and jams.

Juniper

Juniperus spp.

NOTABLE NUTRIENTS OR USES Potassium, calcium, magnesium

SAFETY NOTES Berries may irritate the kidneys, according to some reports. See safety notes below.

NATIVE STATUS Native and/or introduced



Nutrition Notes

Dried berries, per 100 grams

Calcium	84.26 mg
Copper	4.95 mg
Iron	4.98 mg
Magnesium	49.14 mg
Manganese	0.49 mg
Potassium	1.59 mg
Sodium	6.7 mg
Zinc	1.73 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Juniperus virginiana*, slow-growing, dense coniferous tree, either male or female, 15–65 feet tall. Grows tall in good soil, can stay a shrub in poor soil. Evergreen, has a short trunk, long branches, “leaves” in whorls of three. Leaves are needles when young. Female trees produce cones that look like and are soft and fleshy like berries; they change from green to deep blue as they ripen. *Juniperus communis* has male and female cones on the same plant, is often low and spread out in unprotected locations (like a bare hill).

TIME OF YEAR Cones usually ripen in the fall, but it may take two or three years.

RANGE Some species native to North Americas; others introduced

ENVIRONMENT Grows tall in good soil, poorly in poor soil

METHOD OF PREPARATION Berries fresh or dried; often used as a seasoning

Green Deane's Notes

In the septuagenarian cobwebs of my mind, I have two memories of junipers. One is my mother making a juniper tea to “force out” measles. The other is how horribly prickly juniper needles were when someone shoved you into a patch of them.

The idea of “forcing out” measles is highly dubious. Measles make themselves known without having to be prodded to debut by any conifer tea. However, juniper berries and leaves (needles) contain the potent antiviral compound deoxypodophyllotoxin (DPT), which has been shown to be effective against viruses that cause the flu and herpes. So maybe juniper tea did have some effect on the intensity or duration of the measles.

The bush I was pushed into as a kid—and pushed others into—was *Juniperus communis*, the most common juniper at northern latitudes around

the world. Indeed, its nonscientific name is the common juniper. Other types of juniper in North America include *J. californica*, *J. deppeana* (aka *J. pachyphlaea*), *J. horizontalis*, *J. monosperma*, *J. occidentalis*, *J. osteosperma* (*J. utahensis*), *J. scopulorum*, *J. silicicola*, *J. tetragona*, and *J. virginiana*.

Juniperus virginiana is called the eastern red cedar even though it is not a cedar. Ditto for the Southern Cedar, *J. silicicola*, a subspecies of *J. virginiana*. There's one more bit of linguistic history regarding *J. virginiana*. Centuries ago, French Canadians called it *baton rouge*—red stick—because the bark and wood have a red tint. When the Acadians were driven out of Nova Scotia and went to Louisiana, where they became known as Cajuns, they found the Southern Cedar and named the capital of Louisiana for it, Baton Rouge.

The only parts of the juniper that are definitely edible are the berries, which are really female cones. Green parts of the tree, if used at all, should be used for medicinal purposes only. And certain mostly ornamental species, such as *Juniperus sabina* and *J. oxycedrus*, should not be used at all for food or medicine.

Juniper berries are famously used to flavor gin and less famously to flavor the liqueur Chartreuse. They're also used—typically dried and ground—as a spice that seasons stuffing, marinades, game, and stews. In Europe one cannot make authentic sauerbraten or sauerkraut without juniper berries. In the southern Alps, a dark syrup is made from the berries and traditionally eaten with cream or hot milk as a dessert. (Some berries are as much as 30% sugar.) As with many spices, juniper berries should be consumed sparingly. I use them to add flavor to mead and various foods I lacto-ferment (pickle). Medicinally, juniper has been used to treat cold symptoms, headache, dizziness, swollen joints or legs, eye diseases, and diarrhea.

Kelp

Alaria esculenta, Alaria marginata

NOTABLE NUTRIENTS OR USES Calcium, magnesium, potassium, phosphorus

SAFETY NOTES Excessive or heavy iodine consumption can lead to thyroid issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Seaweed with long, ruffled, unperforated fronds 2–3 inches wide and several feet long that are brown or golden brown.

TIME OF YEAR Spring into summer. Poor examples can be found in winter.

RANGE Distributed globally in cool shallow waters close to shore; found along the Pacific Coast from Alaska to California

ENVIRONMENT On rocks at low tide

METHOD OF PREPARATION Fresh or dried

Nutrition Notes

Per 100 grams

43 calories, 0.56 g fat, 9.57 g carbohydrates, 1.68 g protein, 1.3 g fiber

Vitamin A	116 IU
Vitamin B1 (thiamine)	0.05 mg
Vitamin B2 (riboflavin)	0.15 mg
Vitamin B3 (niacin)	0.47 mg
Vitamin B5 (pantothenic acid)	0.64 mg
Vitamin B6 (pyridoxine)	<0.01 mg
Vitamin B9 (folic acid)	180 mcg
Vitamin C	3 mg
Vitamin E	0.87 mg
Vitamin K	66 mcg
Calcium	168 mg
Copper	0.13 mg
Iron	2.85 mg
Magnesium	121 mg
Manganese	0.2 mg
Phosphorus	42 mg
Potassium	89 mg
Selenium	0.7 mcg
Sodium	233 mg
Zinc	1.23 mg

Green Deane's Notes

You can't grow up on the coast of Maine and not be familiar with the sea. I swam there, dug clams there, fished there, boated there, stayed overnight on islands there, froze there ... I also marveled at the big pieces of kelp we'd find, especially their stems. The first time I came upon one, I thought it was the tail of an animal.

There are more than 250 species of seaweed off the coast of Maine; 11 are harvested commercially. A lot of seaweed is called kelp. Winged Kelp, *Alaria esculenta*, is common in the north Atlantic, including New England. If you are on the Pacific Northwest coast, *A. marginata* is your equivalent.

The fronds (or blades) of Winged Kelp are edible—and on the sweet side. Eat them fresh or dried, or make wraps with them. You can also eat the fronds' crunchy center ribs.

The plant is high in sodium, vitamin B12 (cobalamin), and especially iodine. Seven grams has 1,162 mcg of iodine—nearly eight times your daily need. If you ate 100 grams, that would be 110 times your daily need. A 50-gram serving of Winged Kelp provides your daily need of B12.

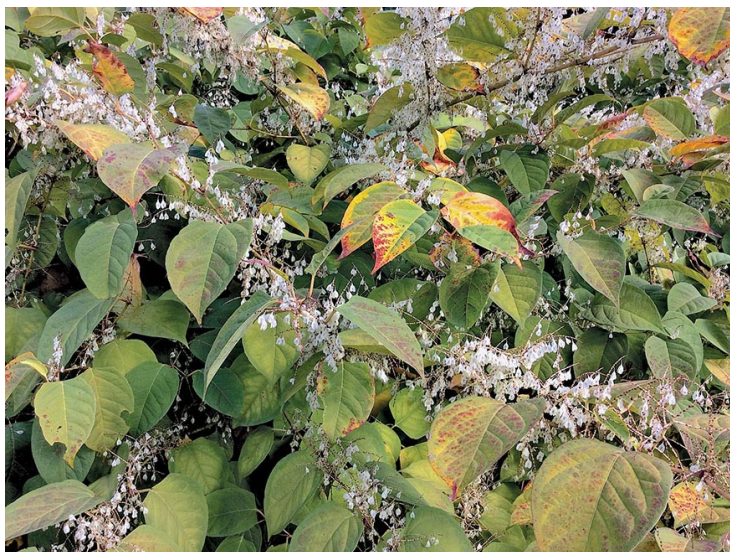
Knotweed

Polygonum cuspidatum

NOTABLE NUTRIENTS OR USES Potassium, calcium, phosphorus, manganese

SAFETY NOTES High in oxalic acid; if you avoid spinach or rhubarb for that reason, don't eat knotweed.

NATIVE STATUS Introduced



Nutrition Notes

Leaves, per 100 grams

calories NA, fat NA, carbohydrates NA, protein NA, fiber NA

Calcium	590 mg
Copper	0.18 mg
Iron	4.6 mg
Magnesium	289 mg
Manganese	17.73 mg
Phosphorus	519 mg
Potassium	1670 mg
Sodium	31 mg

Zinc

2.9 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Fast-growing perennial, woody with age, with hollow, bamboo-like stems forming dense, leafy thickets. Young shoots are red. Leaves simple, alternate, toothless, hairless, broadly ovate with a pointed tip, 3–6 inches long, 2–4.5 inches wide, on long stems. Flowers branch in spiky clusters, are white, green, or pink; have five petals and eight stamens. Female flowers can produce small black-brown fruit. Seed production is uncommon.

TIME OF YEAR Purple shoots appear in spring, flowers late summer or early autumn.

RANGE At least 39 of the 50 states

ENVIRONMENT Riverbanks, roadsides, other moist, disturbed areas

METHOD OF PREPARATION Young shoots, growing tips, young leaves raw, boiled, as an ingredient

Green Deane's Notes

Great Britain spends more than \$2 billion annually to combat Japanese knotweed. Eradication of the plant increased the construction cost of London's 2012 Olympic stadium by about \$96 million.

But the Brits are hardly the only ones battling the species, known scientifically as *Polygonum cuspidatum*, *Fallopia japonica*, or *Reynoutria japonica*. Nearly everywhere Japanese knotweed grows, it's listed as a prolific, dangerous, noxious, bad-for-the-planet, the-sky-is-falling weed. It grows around three feet a month and sends roots down some 10 feet. And it's a pain in the asphalt: Knotweed can grow through concrete and damage roads, dams, buildings, and just about anything made by humans.

It is said that Japanese knotweed outlives the gardener *and* the garden. The International Union for Conservation of Nature (formerly the World Conservation Union) labeled it one of the world's worst invasive species. Yet it's edible, and might even be healthy for you ... pesky weeds have a habit of being like that.

Many folks say knotweed tastes like rhubarb (to which it's related), but I think it's more like a lemony green, crunchy and tender. You can eat the young shoots and leaves and growing tips of larger plants raw or cooked. Boil or steam the leaves; you can then chill them and serve with a dressing, as you would asparagus. The cooked shoots, leaves, and young plants can be used in soups, sauces, pies, jams, chutneys, aspics, even wine.

Both the California Department of Food and Agriculture and the book *Cornucopia II* say knotweed's rhizomes (roots) are edible, but I have never tried them and don't know how to cook them. Research shows the roots have more resveratrol than any other part of the plant. Resveratrol is an antioxidant—the one that makes red wine “healthy”—and there is as much as 37.7 mg of it in every 100 grams of dried knotweed leaves. The plant also contains antioxidants known as carotenoids; total carotenoid content in 100 grams of leaves has been measured at 378 mg of carotenoids, which is higher than spinach.

While knotweed is known to be nutritious, finding specific data is a challenge. No plant in this book burned up more research time than this one. Experts agree that it has vitamin A and C, but I couldn't quantify that. Knotweed is in the buckwheat family, and its common names include fleeceflower, monkeyweed, elephant ears, pea shooters, donkey rhubarb, sally rhubarb, Japanese bamboo, American bamboo, and Mexican bamboo. Giant Knotweed, *Polygonum sachalinense* (*Fallopia sachalinensis*), is consumed similarly, except its fruit can be eaten as well.

Kochia (Burning Bush)

Bassia scoparia

NOTABLE NUTRIENTS OR USES Protein, phosphorus

SAFETY NOTES Can accumulate nitrates, as spinach does, so stay away if you avoid spinach.

NATIVE STATUS Introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION Young plant forms a small rosette; mature grows 2–5 feet tall, usually branched from the base. Alternate leaves linear or lance-shaped, flat, generally gray-green, smooth edges, covered with soft hairs. Stems may be reddish late in season. Flower head is a spike forming clusters of green flowers without petals or stalks. Seeds black-green, oval, flat, glossy. Don't confuse with *Bassia hyssopifolia* (Fivehook Bassia), which has branches along the main stem and is hairier.



Nutrition Notes

Per 100 grams

Seeds: 459 calories, 25 g protein, 5.7 g fiber

Greens: 5.1 g protein, 7.7 g fiber

Phosphorus

811 mg (seeds)

TIME OF YEAR Blooms July through October

RANGE All states save for Maryland, Florida, Georgia, North Carolina, Arkansas, and Alabama

ENVIRONMENT Roadsides, fields, pastures, disturbed places, new crop fields, ditches, floodplains to 5,000 feet

METHOD OF PREPARATION Young leaves, tips, and seeds cooked

Green Deane's Notes

You know the scene in many a Western: tumbleweeds rolling through deserted dirt streets just before a good guy/bad guy shootout. Didn't happen. The Wild West and tumbleweeds were several decades apart. Two weeds known as tumbleweeds—kochia and Russian thistle (see [page 242](#))—came from the grassy steppes of southern Russia with immigrants to the New World and really didn't make it to the West until around 1900.

Nowadays, most references consider kochia—also known as burning bush, summer cypress, and fireweed—an ornamental because of the fiery color it displays in the fall. But it likely was an edible or dye plant first, and only after people moved off the farm did it become an ornamental. In some states, particularly in the West, it is designated a noxious weed. Each plant produces about 15,000 seeds, though three times that is possible. They get distributed by ... tumbling.

Kochia's leaves and growing tips are edible cooked or boiled. The plant is very salty-tasting. Its seeds can be eaten but have to be dried, boiled, then soaked in cold water for a day. Rub them to remove their outer skin. In Japan, the seeds are prepared into a delicacy called tonburi, a garnish that's nicknamed "land caviar" or "mountain caviar."

Kudzu

Pueraria montana var. *lobata*

NOTABLE NUTRIENTS OR USES Calcium, phosphorus, iron, carbohydrates, fiber

SAFETY NOTES Seeds and seedpods are inedible; see below

NATIVE STATUS Introduced



Nutrition Notes

Leaves, per 100 grams

36 calories, 0.1 g fat, 9.7 g carbohydrates, 0.4 g protein, 7.7 g fiber	
Vitamin B1 (thiamine)	0.03 mg
Vitamin B2 (riboflavin)	0.91 mg
Vitamin B3 (niacin)	0.8 mg
Calcium	34 mg
Iron	4.9 mg
Phosphorus	20 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Climbing vine up to 100 feet in length. Stem diameter 0.5–4 inches, old “stumps” can be nearly 12 inches across. Leaves alternate, to 4 inches wide, compound, hair on edges, with three broad leaflets that are deeply lobed and hairy underneath. Flowers purple, a half inch long, highly fragrant, in long clusters. Seedpods brown, hairy, flattened, containing 3–10 seeds.

TIME OF YEAR Shoots in spring, young leaves anytime, blossoms July through October, roots best in fall or early spring

RANGE Native to Japan and China; now widespread in the southern US

ENVIRONMENT Likes full sun, heat, plenty of water

METHOD OF PREPARATION All parts except seeds and seedpods can be cooked or processed in various ways.

Green Deane's Notes

Kudzu is an extremely versatile plant. We just don't use it enough. But know this: If kudzu grows near you, you won't starve. It's not on menus yet, but you may wish it were. Kudzu is not a famine food but prime fare. We call it a weed because we're not hungry enough. You may have heard it's the most invasive species in the southern United States, but that's not true: Asian Privet (*Ligustrum sinense*) has invaded some 3.2 million acres in the South—14 times more than kudzu.

The only thing about kudzu I don't care for is the scent of its flowers in bloom. They smell exactly like cheap, artificially flavored grape chewing gum made for kids. You can detect them from hundreds of feet away.

Kudzu was introduced into the United States at the Centennial Exposition in Philadelphia in 1876. Japan built a garden using kudzu. Then it was at an exposition in New Orleans in 1883. American gardeners fell in love. By 1908, kudzu was being promoted as a forage crop in Florida, then it was widely distributed in the 1920s by a Florida nursery. (At one time they proudly displayed a "Kudzu ground zero" plaque.) It was planted by the conservation corps during the Great Depression, and in the 1940s the government was paying farmers \$8 an acre (\$173 in today's money) to grow kudzu for soil conservation. It was called "the miracle vine," and cotton was no longer king of the South.

But by the mid 1950s, the government suspected something was wrong and stopped paying farmers to plant it. Kudzu can grow a foot a day, and when escaped from cultivation it can smother and kill an entire forest. It was officially labeled a weed in 1970 and added to the federal noxious weed list in 1997. A half a billion dollars is now spent annually trying to contain it. So a huge amount of food is not being consumed, a resource not being used. A country in famine would probably not call nutritious kudzu a noxious weed.

Kudzu can be eaten many ways. Only the seeds and seedpods are inedible for humans. The young leaves can be consumed as a green in salad, juiced, or dried and made into a tea. Older leaves can be fried like potato chips or used to wrap food for cooking. Shoots can be eaten like asparagus. Flowers have a taste between apple and peach, and you can batter-fry or pickle them, or make a syrup or jelly with them. Roots stripped of their outer bark can be stewed or roasted like any root vegetable. You also could grate and grind the roots to make a thickener. Kudzu roots are full of edible starch, but extracting it takes hours of pounding.

And then there are all the nonfood uses: soap, lotion, twine, paper, baskets, wallpaper. Several years ago a kudzu methanol car-fuel plant was in the works in the US, but plans stalled. Kudzu can be baled like hay, and most grazing animals like it, especially goats.

Kudzu's botanical name is sometimes given as just *Pueraria lobata*, skipping the *montana* part. Someone unfamiliar with the plant might mistake it for tick trefoil (*Desmodium rotundifolium*) or hog peanut (*Amphicarpaea bracteata*). They look alike, but kudzu's young stems are very hairy and the others' are not. Just follow the grape aroma when it's blossoming.

Labrador Tea

Ledum groenlandicum, *Ledum palustre*

NOTABLE NUTRIENTS OR USES Niacin, vitamin C, calcium, iron

SAFETY NOTES See preparation notes below.

NATIVE STATUS Native



Nutrition Notes

Leaves, per 100 grams

calories NA, 0.7 g fat, carbohydrates NA, 4.2 g protein, fiber NA

Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.4 mg
Vitamin B3 (niacin)	92 mg
Vitamin C	98.2 mg
Calcium	215 mg
Copper	2.4 mg
Iron	184 mg
Magnesium	73 mg
Manganese	45.4 mg
Phosphorus	93 mg
Sodium	3.7 mg
Zinc	2.4 mg
Chloride	31 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen shrub with narrow, long-stalked leaves, 0.5–2.5 inches long (*Ledum palustre* shorter, *L. groenlandicum* longer), green with a white bloom with wool underneath when young, darker green with rusty-red wool when older. Flowers white clusters at end of twigs; fruit dry, brown capsules.

TIME OF YEAR Leaves grow only in warmer months but available year-round

RANGE The northern US and Canada; found in northern latitudes worldwide

ENVIRONMENT Boggy or peaty soil, heaths, barrens, rocky places

METHOD OF PREPARATION Leaves dried for tea or seasoning

Green Deane's Notes

Labrador tea is, obviously, used for tea. You can make it with fresh or dried leaves. Carefully dried flowers can also be used for tea. One can dry them in an oven set on low, in the sun, or in a dehydrator. The dried leaves may also be used like bay leaves for seasoning, most often meat.

Ledum groenlandicum has the common name Bog Labrador Tea; *L. palustre* is Marsh Labrador Tea. I visited a lot of bogs in Maine during college for an environmental science class—high-moor and low-moor bogs—but I don't recall harvesting any Labrador tea. Merritt Fernald, the esteemed Harvard botanist, said in his 1958 book *Edible Wild Plants of Eastern North America* that Labrador tea was quite popular and that of the two species, *L. palustre* was preferred.

Lamb's-Quarter (Goosefoot)

Chenopodium spp.

NOTABLE NUTRIENTS OR USES Vitamin A, vitamin C, protein, calcium, magnesium

SAFETY NOTES High in oxalic acid, so don't consume if you've had kidney stones, gout, or a related condition.

NATIVE STATUS Introduced and/or native



Green Deane's Itemized Plant Profile

IDENTIFICATION Large plant to 6 feet tall or more, often mealy early in the season; leaves diamond-shaped with widest point usually well below the middle, untoothed sides at base, straight-toothed sides to tip. Flowers ball-like clusters arranged in spikes, have five green sepals and five yellow stamens.

Nutrition Notes

Leaves, per 100 grams	
33 calories, 0.7 g fat, 5.4 g carbohydrates, 3.3 g protein, 1.6 g fiber	
Vitamin A	1277 RE (raw), 970 RE (cooked)
Vitamin C	98.3 mg (raw), 37 mg (cooked)
Calcium	309 mg (raw), 258 mg (cooked)
Copper	0.2 mg (raw)
Iron	1.1 mg (raw), 0.7 mg (cooked)
Magnesium	177 mg (raw)
Manganese	1.1 mg (raw)
Phosphorus	76 mg (raw), 45 mg (cooked)
Potassium	874 mg (raw)
Zinc	0.7 mg (raw)

Nutrition Notes	
Seeds, per 100 grams	
414 calories, 4.2 g fat, 49.6 g carbohydrates, 16.6 g protein, 12.5 g fiber	
Calcium	1017 mg
Iron	62.9 mg
Magnesium	675 mg
Manganese	5.2 mg
Potassium	1656 mg
Sodium	8 mg

TIME OF YEAR Young shoots in spring, leaves summer and fall, seeds autumn

RANGE Native to Europe; common in North America; cultivated widely

ENVIRONMENT Waste ground to fertile gardens

METHOD OF PREPARATION Leaves raw when young, cooked when older; seeds raw after prolonged soaking

Green Deane's Notes

My earliest recollection of lamb's-quarter involves our then next-door neighbor Bill Gowen, a wiry-but-strong man and an excellent gardener. He

and his wife had degrees in agriculture and were making a good effort at running a farm raising a few thousand chickens (and seven kids).

Mr. Gowen had come over to our place to help us with some copper plumbing, and as he was leaving, he stopped, chewed on his pipe stem, slid back on one hip as was his physical habit, and remarked that the “pigweed” on our lawn was mighty fine-looking. Earlier that year, my stepfather had spread hay chaff from the barn on the dirt area set aside for lawn and grew a gigantic crop of wild mustard and lamb’s-quarter—which is indeed sometimes called pigweed—but no grass. Would we mind if he took some home for supper, Mr. Gowen wanted to know.

That caught my ears because I didn’t know it was edible. My stepfather told Mr. Gowen to take all he wanted, so he started yanking on four or five plants that were much taller than he was. He wrestled them from the hard soil and took them all home, stems and all. I remember the happy look he had hauling them out and taking them away. (I still hear from some of the Gowen children now and then; I should ask them if they still eat lamb’s-quarter.)

Turns out, *Chenopodium* have been a mainstay edible for many for centuries. The type growing in our yard was the extremely common *C. album*. North American native *C. berlandieri* is similar and also common. Other edible *Chenopodium* are *C. bonus-henricus*, *C. californicum*, *C. capitatum*, *C. fremontii*, *C. leptophyllum*, *C. rubrum*, and *C. urbicum*. *C. ambrodioides*, *C. botrys*, and *C. pueblense* are used as spices, though they’re more stinky than spicy. Avoid altogether the smelly medicinal *C. anthelminticum*, which is in even stronger.

Chenopodium are also known as goosefoot, referring to the shape of the leaves. They are also called fat hen, because they supposedly were good for fattening hens. The name *lamb’s-quarter* has nothing to do with lambs. Some 1,300 years ago, the leafy green was eaten on Lammas quarter day

(August 1) in Britain. Quarter days mark four periods within a year; *Lammas* came from Loaf Mass, when a loaf of bread made from newly harvested grain was taken to church and blessed.

You can eat young lamb's-quarter leaves raw. Older leaves should be boiled or sweated (a kind of gentle sautéing). Seeds are edible if you soak them overnight (like quinoa) and then rinse well, to remove potentially toxic saponins on surface.

Lantana

Lantana camara

NOTABLE NUTRIENTS OR USES Potassium, magnesium, calcium, iron

SAFETY NOTES Toxic to dogs, cattle, horses, and goats;see safety notes below.

NATIVE STATUS Introduced



Nutrition Notes

Berries, per 100 grams

calories NA, 43.9% fat, carbohydrates NA, 6.7% protein, fiber NA

Vitamin A	
Vitamin B1 (thiamine)	0.08 mg
Vitamin B2 (riboflavin)	0.09 mg
Vitamin B3 (niacin)	1.86 mg
Vitamin C	4.1 mg
Calcium	48.3 mg
Iron	1.81 mg
Magnesium	32.5 mg
Potassium	512 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen shrub to 6 feet high and 8 feet wide. Leaves 2–5 inches long by 1–2 inches wide, with rounded tooth edges and textured surface. Stems and leaves covered with rough hairs. When leaves are crushed, they smell like cat urine. Small flowers, in clusters typically 1–2 inches across. Color of flowers can be white, yellow, orange, red, or pink; not necessarily all the same color on a plant, and color may change as flowers age. Fruit edible when berries are purple-black; toxic when unripe and green.

TIME OF YEAR Fruit can ripen all year but are heavy in early summer.

RANGE North Carolina and south, west to California

ENVIRONMENT Waste places to landscaping to a potted plant. Prefers full sun

METHOD OF PREPARATION Ripe berries fresh or in pies, jams, etc.

Green Deane's Notes

Ask anyone who's heard of *Lantana camara*, and they'll tell you it is poisonous. And they're right: Unripe berries have killed children, and the foliage has killed livestock.

The 1999 book *Edible and Useful Plants of Texas and the Southwest*, by Delena Tull, states, "Though some previous publications assert that the ripe fruit is edible, experimental studies show that both ripe and unripe fruit are potentially lethal." That is not necessarily true. I've eaten ripe berries as a trail nibble and I'm still here. People, including children, eat ripe berries both in this country and in Africa.

Just so there is no confusion: Ripe for the lantana means deep-blue, purple, or black berries. Not green or partially green. The ripe berries can make you

more light-sensitive, so try a few one at a time until you know you are not affected by them. And even then, it's probably best not to eat more than a handful at once. Ripe lantana berries are slightly aromatic, very sweet, and crunchy. They taste like a cross between black currants and cherries. As with most other berries, you can use them in pie, jam, jelly, and a cordial.

A cousin to the American beautyberry, lantana is listed as one of the worst weeds in the world. Butterflies love it, however, and it is a must-have bush in every butterfly garden. Birds spread the seeds around. Humans have made use of lantana outside of food: The fruit produces a light-purple dye; the leaves can be used to polish wood; and in the Caribbean, a mild tea made from the leaves is drunk to ease cold symptoms.

Laver (Nori)

Porphyra spp.

NOTABLE NUTRIENTS OR USES Vitamin C, sodium, potassium, calcium, phosphorus

SAFETY NOTES See preparation tips below.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Seaweed with thin, satiny, lobed or cleft fronds a few inches to a foot long that are red, dark purple, or purple-brown in color and have ruffled edges

TIME OF YEAR All year, though late spring is peak.

RANGE Western and eastern coasts of North America

ENVIRONMENT Deposited on shore or growing on rocks. Find it at low tide.

METHOD OF PREPARATION Raw, dried, powdered, or boiled

Green Deane's Notes

You've probably had laver, but it was at a Japanese restaurant and called nori. Laver lives where the water is cold. If the sea is too cold for swimming in August, you have laver. Your biggest challenge would be finding a clean water area to harvest from. Harvesting at low tide gets you fresher food. Some people take seaweed from the beach, but others view that like eating your salad after it's fallen on the floor.

Nutrition Notes

Per 100 grams

(fresh) 35 calories, 0.28 g fat, 5.11 g carbohydrates, 5.81 g protein, 0.3 g fiber

(dried) 279 calories, 1.4 g fat, 58 g carbohydrates, 24.4 g protein, 25.2 g fiber

Vitamin A	5202 IU (fresh), 263 RE (dried)
Vitamin B1 (thiamine)	0.1 mg (fresh), 0.37 mg (dried)
Vitamin B2 (riboflavin)	0.45 mg (fresh), 1.79 mg (dried)
Vitamin B3 (niacin)	1.47 mg (fresh), 6.7 mg (dried)
Vitamin B5 (pantothenic acid)	0.52 mg (fresh)
Vitamin B6 (pyridoxine)	0.16 mg (fresh)
Vitamin B9 (folic acid)	146 mcg (fresh)
Vitamin C	39 mg (fresh), 11.6 mg (dried)
Vitamin E	1 mg (fresh)
Vitamin K	4 mcg (fresh)
Calcium	70 mg (fresh), 230 mg (dried)
Copper	0.26 mg (fresh), 1.7 mg (dried)
Iron	1.8 mg (fresh), 10.5 mg (dried)
Magnesium	2 mg (fresh), 623 mg (dried)
Manganese	0.99 mg (fresh), 1.6 mg (dried)
Phosphorus	58 mg (fresh), 474 mg (dried)
Potassium	356 mg (fresh), 3140 mg (dried)
Selenium	0.7 mcg (fresh)
Sodium	48 mg (fresh), 3300 mg (dried)
Zinc	1.05 mg (fresh), 1.7 mg (dried)
Choline	10.4 mg (fresh)

Wash laver well, to dislodge sand and anything clinging to it. Then you can use it raw or cooked in soups or stews. When fresh, it has to simmer at least 45 minutes to be tender. Use dry laver in soups and stews as a flavorful addition, or to wrap sticky rice or the like. The Welsh have a food called Laverbread, a mush made from boiling and pureeing laver that is eaten cold or hot, usually accompanying meat.

Lemon Bacopa

Bacopa caroliniana

NOTABLE NUTRIENTS OR USES No nutritional information available; protein

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Creeping herb 3–6 inches high, forms patches; the plant is rough to the touch. Leaves alternate, half inch long, on stem; flowers blue or white, four or five petals

TIME OF YEAR Seasonally in northern climes, year-round where it's warm

RANGE Coastal states of Southeast and South (as far west as Texas)

ENVIRONMENT Semiwet places like shallow ditches next to damp roads, low woods, or fields. Prefers full sun but can tolerate some shade.

METHOD OF PREPARATION Tea

Green Deane's Notes

Lemon Bacopa smells of fresh limes. The tea it makes has a lime flavor. Chew a Lemon Bacopa leaf; it tastes like lime. Rub it on yourself; people will call you "Limey." I don't know why they call it Lemon Bacopa.

One doesn't see Lemon Bacopa in the wild too often, though it's not rare. It's usually something you notice while looking for another species ... there it is, a thick patch of succulent-looking little plants, smelling of lime when you step on them. I have always found Lemon Bacopa inland, but it can grow and flower totally submerged. This is probably why it's a big hit with the aquarian crowd. Its alternate name is Blue Water Hyssop.

Steep fresh leaves in hot water for a citrusy tea. You may get even more out of it than a drink: Studies on the plant have indicated it can have "strong antimicrobial effects" and is 9.2% protein.

Lemongrass

Cymbopogon citratus

NOTABLE NUTRIENTS OR USES Manganese, iron, potassium, phosphorus, calcium

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced



Nutrition Notes

Per 100 grams

99 calories, 0.49 g fat, 25.31 g carbohydrates, 1.82 g protein

Vitamin A	6 IU
Vitamin B1 (thiamine)	0.06 mg
Vitamin B2 (riboflavin)	0.14 mg
Vitamin B3 (niacin)	1.10 mg
Vitamin B6 (pyridoxine)	0.08 mg
Vitamin B9 (folic acid)	75 mcg
Vitamin C	2.6 mg
Calcium	65 mg
Copper	0.27 mg

Iron	8.17 mg
Magnesium	60 mg
Manganese	5.22 mg
Phosphorus	101 mg
Potassium	723 mg
Selenium	0.7 mcg
Sodium	6 mg
Zinc	2.23 mg
Beta-carotene	3 mcg

Green Deane's Itemized Plant Profile

IDENTIFICATION Clumping evergreen 2–5 feet high with narrow, sharp-edged blades of grass that are blue-green or gold. Tiny flowers on stalk are white, cream, or green. Crushed blade has distinct aroma of lemon.

TIME OF YEAR Year-round in warm climates

RANGE Native to India, Sri Lanka, Burma, and Thailand; has escaped cultivation in some warmer states

ENVIRONMENT Prefers moist soil and full sun

METHOD OF PREPARATION Leaves steeped for tea or cooked in soup, etc., for flavor; the stalks are root-like and tough; stalks should be chopped into small pieces and then cooked or made into a paste.

Green Deane's Notes

I've grown two lemongrasses. One I got from an Asian grocery—it had some roots on it, so it was locally grown—and one from a froufrou farmers market. I called one Chinese, and the other was supposedly from India. After watching them for more than 10 years, I think they are the same species. They spread easily in my yard (even getting under a 12-foot driveway): If I don't mow—and I hate to mow—the lemongrass will

quickly sprout from underground roots, though it also seeds. The only place I take it out is where it threatens to overshadow my sassafras sapling.

Lemongrass, *Cymbopogon citratus*, is best-known for tea or flavoring (yes, it tastes lemony) made from its leaves (blades). But its lower stalks also have culinary uses: chop them up and toss them into stir-fries, or grind them into a paste to use as flavoring. You can freeze or dry lemongrass leaves to use in the future. Dried leaves need to be rehydrated before use.

In 2006 researchers found that lemongrass causes cancer cells to kill themselves, at least in the test tube. It did not affect healthy cells. The study was done on one gram of lemongrass in a cup of hot water. I use a heck of a lot more than that when I make lemongrass tea, so I should be supersafe. I take a full blade (be careful, the edges can cut you) and, starting at the bottom, tie the blade in knots. I keep tying until I have a big knot and enough left over for a dipping handle. Then I put it in hot water. It floats, but that's no problem. You can also use the handle to stir it. Let it steep for a minute or two, then bottoms up!

Litchi Tomato

Solanum sisymbriifolium

NOTABLE NUTRIENTS OR USES No nutritional information available; ascorbic acid, beta-carotene; protein

SAFETY NOTES Take care not to collect the yellow-fruited horse nettle or other toxic *Solanum* species.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Erect annual or perennial to about 3 feet tall. Stem and branches sticky, hairy, armed with flat, yellow-orange spines up to 0.5 inch long. Leaves oval or lance-shaped, up to 15 inches long, thorny, pinnately divided into four to six coarse lobes, hairy above and below, with stems 0.5–2 inches long. Unbranched racemes composed of 1–10 five-part flowers white, light blue, or mauve, about an inch in diameter, smell like fish. Fruit looks like a cherry tomato, red and globular, with pale-yellow

seeds and yellow flesh, develops inside a husk (calyx) totally covered with spines.

TIME OF YEAR Similar season as tomatoes, for whatever climate they're in

RANGE Most US states

ENVIRONMENT Rich soil, ample sun, moderate-but-steady watering. Roadsides, waste places, landfills, disturbed fields, in farming country around manure piles or compost bins.

METHOD OF PREPARATION Raw or as cooked ingredient, just like other tomatoes

Green Deane's Notes

Foraging is treasure hunting. With perhaps 6,000 edible species in North America, there's always a surprise. Like the Litchi Tomato, a hardy nightshade that reseeds itself and gets along quite nicely without anybody's attention. It can be found not only in gardens but in the wild around the world. Even though you may cultivate it, this wandering botanical also known as Sticky Nightshade often strikes out on its own.

The Litchi Tomato is a tough member of a fragile family (tomatoes, eggplant, peppers, and potatoes are all nightshades): It can take a light frost, even temperatures down to 25°F. In warmer climes, it gets more spiny over the winter. That it has spines yet is still edible is unusual for this genus. Most *Solanum* with spines are highly toxic, if not deadly. This is why one must not mistake the horse nettle (*Solanum carolinense*) for the Litchi Tomato.

A healthy *Solanum sisymbriifolium* plant will produce about a quart of tomatoes. The fruit is ripe when it can be removed easily. If it resists, it is not ready to eat. The fruit's texture is similar to a raspberry's. Litchi Tomatoes taste tart, like sour cherries. They can be eaten raw but are

preferred as a cooked ingredient (they respond well when combined with some sweetness), in the same dishes and recipes you would use “regular” tomatoes. Some people like to strain out the seeds with a sieve when they’re cooked.

A 2015 report said the Litchi Tomato contains 2042–4511 mg of ascorbic acid (vitamin C) and 6.8–10.4 mg of total phenolics per gram. It also has a significant amount of antioxidants, with beta-carotene the most abundant carotenoid at 204–633 mg per gram. Protein ranged from 86.9–120.9 mg per gram.

Loquat

Eriobotrya japonica

NOTABLE NUTRIENTS OR USES Vitamin A, potassium, phosphorus, magnesium, calcium

SAFETY NOTES Do not eat the seeds, and do not eat an uncooked green loquat. There is one case on record of a 5-year-old child being stupefied for 2 hours after consuming green fruit.

NATIVE STATUS Naturalized in many areas



Nutrition Notes

Based on two different analyses

Per 100 grams

168 calories, 0.7 g fat, 43.3 g carbohydrates, 0.14 g protein, 0.5 g fiber

Vitamin A	1528–2340 IU
Vitamin B1 (thiamine)	0.02 mg
Vitamin B2 (riboflavin)	0.02 mg
Vitamin B3 (niacin)	0.18 mg
Vitamin B6 (pyridoxine)	0.1 mg

Vitamin B9 (folic acid)	14 mg
Vitamin C	1–3 mg
Calcium	16–70 mg
Copper	0.04 mg
Iron	1.4 mg
Magnesium	13 mg
Manganese	0.15 mg
Phosphorus	27–126 mg
Potassium	266–1216 mg
Selenium	0.6 mcg
Sodium	1 mg
Zinc	0.95 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen large shrub or small tree with rounded crown, short trunk, woolly new twigs. Leaves alternate, simple, 3–9 inches long, dark green, leathery, toothed edges, velvety on underside. The apricot-like fruit is initially green, ripening to golden-yellow, sweetening the more yellow it gets. Found growing in clusters on thick, fuzzy stems.

TIME OF YEAR Depending on cultivar, fruits in spring, late summer, or fall

RANGE Native to China and Japan; brought to Florida in the 19th century

ENVIRONMENT Likes heat and full sun

METHOD OF PREPARATION Raw, cooked, or dehydrated (after deseeding)

Green Deane's Notes

Loquats are homebodies. They don't travel well. They bruise easily and lose their freshness quickly, much like roses, their distant relative. From tree to kitchen is about the maximum distance loquats will endure. Most people who live beyond their growing range have never eaten a fresh one.

To me, the optimum distance for a loquat is tree to tummy. I've eaten plenty of them fresh off the tree. I've also made loquat wine and dried them like prunes. They do turn brown when you dry them, but they take on a nice flavor. Nutritionists say loquats will keep several weeks in the refrigerator, but my experience is by then they look like large, lumpy raisins. Other things you can make with loquats include jam, jelly, chutney, sauce, and pie. They can also be spiced and pickled. Always be sure to remove the seeds before eating, dehydrating, or cooking any loquats, and don't eat them when they're green—they taste awful then.

Botanically, the loquat is in the same family as apples, pears, peaches, and plums. Although it's called the Japanese plum, it is not a plum nor is it native to Japan. But it's extremely popular there, and its wood has been used to make bokkens, swords in martial arts. It's also good for making rulers.

In the 1950s, loquat blossoms were used in perfume. The quality was considered outstanding, but the yield was low, so it was not commercially viable. Some individuals get headaches when too close to a loquat tree in bloom, the aroma from the flowers is so sweet and penetrating. The trees grow wherever, wet or dry, a bird drops the seed. At least four species of fruit-eating bats also do their best to spread and fertilize loquat seeds.

Mahoe and Milo

Hibiscus tiliaceus, Thespesia populnea

NOTABLE NUTRIENTS OR USES Protein, vitamin C

SAFETY NOTES See harvesting details below.

NATIVE STATUS Introduced



Nutrition Notes: Mahoe

Per 100 grams

25.2 calories, 0.4 g fat, 5.3 g protein

Vitamin B1 (thiamine)	0.5 mg
Vitamin B2 (riboflavin)	0.13 mg
Vitamin B3 (niacin)	0.9 mg
Vitamin C	5 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Hibiscus tiliaceus*, shrub to large tree, tangled growth, in wet areas the low branches root in water. Leaves nearly round, 4–8 inches wide, shiny green on top, soft and fuzzy gray-green on underside, 9 or 11 prominent veins. Cupped, five-petaled flowers with dark center and 10-point calyx, yellow turning maroon, then falling. Seeds hard, brown, 0.13 inch long. *Thespesia populnea*, shrub or tree to 50 feet. Leaves heart-shaped, 2–5 inches long, seven prominent veins. Cupped flowers to 3 inches long, crinkled, pale yellow with purple-red center when first opened, dark red by end of day, can stay on tree for several days. Seeds brown, about 0.5 inch by 0.25 inch. *H. tiliaceus* has dense, star-shaped hairs on lower leaf surfaces; *T. populnea* does not. Don't confuse either plant with *Hibiscus pernambucensis* (Amapola or seaside mahoe), which has yellow flowers without a dark center.

TIME OF YEAR Year-round or close to it

RANGE Subtropical and temperate areas

ENVIRONMENT Coastal hummocks, dunes, damp mainland, landscaping. Specifically the milo (*Thespesia populnea*): bay and inlet shores, silty land, coral, soil with high rock content.

METHOD OF PREPARATION Flowers boiled or batter-fried, leaves boiled, roots roasted

Green Deane's Notes

To my knowledge, all hibiscus are edible in some way. They are not all edible in the same way, though, and palatability varies greatly. Nearly everything is edible on the mahoe (*Hibiscus tiliaceus*): flowers, leaves, inner bark, young roots. From the milo (*Thespesia populnea*)—which is in the hibiscus family (Malvaceae), if not the genus—you can eat the flowers raw or cooked and the leaves if cooked.

Both plants grow near the shore: the mahoe within a couple of miles of the water; the milo within feet of, if not on, the beach. The milo doesn't like cold but can take mild frosts once established. It resists salt, ocean spray, and wind and provides shelter and food to many denizens of coastal swamp areas.

As with most hibiscus, the mahoe's blossoms last only a day before they fall. The milo's flowers may endure a couple of days longer, but like the mahoe's, they change color during their first day, from yellow to a purplish red. That may be a sign the plant is making antioxidants to protect it from the sunlight. Another reason for the change could be to lure different pollinators—both those attracted to yellow and those attracted to the darker color.

Eat the flowers of either the mahoe (aka Sea Hibiscus) or the milo (or portia tree) raw, or dip them in batter and fry them. Or boil them like greens, which is also how you'd cook the leaves. The leaves can also be fermented into a sauce to make a tempeh starter. The mahoe's roots can be roasted and the inner bark, the cambium, can be suckled of its moisture.

Beyond food uses, the mahoe's bark can be peeled off in strips and turned into fishing lines. It was used to make cloth in the Pacific Islands before cotton was available. And if you need to start a fire with the bow-and-spindle method, a hardwood spindle on a baseboard of dry mahoe will create a burning ember very easily.

The milo provides excellent wood for carving, and its bark can be used for cordage or caulking. Medicinally, the milo has been used throughout Polynesia, including a decoction of its leaves taken for coughs and headaches, and an infusion of the bark to treat intestinal diseases.

Mangrove

Rhizophora mangle, *Avicennia germinans*

NOTABLE NUTRIENTS OR USES Calcium, magnesium, potassium, niacin

SAFETY NOTES Avoid *Excoecaria agallocha*, the Australian Milky Mangrove; it has toxic white sap, which can cause severe skin irritation and temporary blindness.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION The red mangrove *Rhizophora mangle* has cigar-like fruit and ovate to lanceolate leaves that are slightly wider at the end. The black mangrove, *Avicennia germinans*, also called the Honey Mangrove, has seeds that resemble gigantic lima beans and small ovate leaves.

TIME OF YEAR Can seed all year but favors spring

RANGE Tropical and subtropical areas around the world



Nutrition Notes

Leaves made into meal, per 100 grams

calories NA, 3.6% fat, carbohydrates NA, 7.5% protein, 13.9% fiber

Vitamin B1 (thiamine)	13 mg
Vitamin B2 (riboflavin)	19 mg
Vitamin B3 (niacin)	240 mg
Vitamin B5 (pantothenic acid)	5.3 mg
Vitamin B9 (folic acid)	32 mg
Calcium	1350 mg
Copper	3.5 mg
Iodine	54 mg
Iron	15 mg
Magnesium	880 mg
Manganese	30 mg
Phosphorus	140 mg
Potassium	650 mg
Zinc	4.3 mg
Choline	46 mg

ENVIRONMENT Coastal areas, brackish water. If you're not standing in smelly tidal muck with all kinds of insects bothering you, you are not in the right environment.

METHOD OF PREPARATION Leaves dried for tea or wine

Green Deane's Notes

Mangroves are coastal trees that tolerate salt. In ancient times they grew inland. Now the red mangrove, *Rhizophora mangle*, is found at or in the water and survives flooding. When one thinks of bushes "walking on water," red mangroves come to mind. Their seedpods litter beaches at certain times of the year. Mangroves are bushes in the southern US, but they get larger closer to the equator, even reaching tree status.

The black mangrove, *Avicennia germinans* (also called the Honey Mangrove), is found at the high tide mark and can take occasional flooding. Many years ago I brought a black mangrove seedling back from one of my foraging trips and, after raising it a bit on my balcony, planted it with a stake in a swale at my apartment complex. When last I checked, it was happily growing three decades later. I can't help but wonder if some day a researcher will find that tree, or its remains, and wonder how it got so far inland.

Dried leaves of the red mangrove produce a nice tea, with a tannin content close to 12%. The tea should be served with milk to bind the tannins. Both the leaves and the young fruit can be used to make wine. Mangrove fruit is actually not a fruit but a propagule, the seed of a new mangrove. It starts out as a bud but develops into something shaped like a curved, thin-ringed cigar—and when dry can be smoked like one, if you snip off each end. While the starchy inner cores of propagules are usually survival food, I cook propagules in a lot of water, cut them in half lengthwise, scrape the piths out, and eat, unless still bitter. Then I cook them a second time in plenty of water. The black mangrove's propagules can also be cooked for a famine food (they are toxic raw). And you can collect salt for food off its leaves, which are often coated with it.

Recent research showed that extracts from the bark of the red mangrove contain antioxidants, are antimicrobial, and can reduce gastric ulcers. Red mangrove twigs can be used to clean teeth. At one time the leaves were considered a potential protein source for humans, but that was sidelined by their high tannin content.

Maple

Acer spp.

NOTABLE NUTRIENTS OR USES Calcium, magnesium, potassium, phosphorus

SAFETY NOTES Red maple leaves are toxic to horses. Most, but not all, *Acer* species have edible seeds. Some species, including the box elder (*Acer negundo*) and sycamore maple (*Acer pseudoplatanus*) have toxic seeds. Confirm that the seeds you're consuming are edible first.

NATIVE STATUS Native and/or introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Tree 20 to 160 feet high. Sugar maple twigs are glossy and reddish brown. The slender buds are brown, sharp, and point down. The bark is smooth and gray young, becoming furrowed, scaly, and dark gray on older trees. Leaves either opposite, lobed (think: Canadian flag) or oval, often toothed. Seeds (fruit) resemble peas or beans; seedpods grow in pairs, with papery “wings” attached.

TIME OF YEAR Late winter/early spring for seeds, spring for sap and inner bark, leaves best in spring

RANGE Many maples are native to Asia, though some species are native to North America, Europe, and northern Africa.

ENVIRONMENT Moist soil, riverbanks in the South; on forested hills and mountainsides in northern areas

METHOD OF PREPARATION Sap boiled down for syrup, seeds and leaves raw or cooked, inner bark cooked or powdered

Green Deane's Notes

There are more than 200 tappable tree species, including birch, hickory, sycamore, and ash, but maples are the trees most people associate with being tapped for sap. And maple syrup is undoubtedly the most famous food product to come out of those trees.

Sap is not the only edible part of a maple tree, however. Its seeds can be eaten raw, roasted, or boiled—but first remove their “wings,” which can be bitter and hard to digest. You may also want to taste the seeds before cooking them to make sure they’re not too bitter. Roast maple seeds in a 350°F oven for 10 minutes maximum. You can also dehydrate the seeds by letting them dry naturally or dehydrating on a low temperature. Dried or roasted seeds can be ground into flour. To collect seeds from a maple, run your hand down a branch, stripping it of the winged seeds (known as samaras). One at a time peel off their outer skin—what we called the “whirligig” when I was a kid. Cut the end of each wing and squeeze out the seed.

Nutrition Notes

Per 100 grams

Sap: 0.1 g protein; Syrup: 348 calories

Vitamin B1 (thiamine)	0.07 mg (syrup)
Vitamin B2 (riboflavin)	1.27 mg (syrup)
Vitamin B3 (niacin)	0.08 mg (syrup)
Calcium	3 mg (sap), 107 mg (syrup)
Chloride	17.3 mg (syrup)
Copper	0.1 mg (syrup)
Iron	4.2 mg (syrup)
Magnesium	17.7 mg (syrup)
Manganese	1 mg (sap),
Phosphorus	1 mg (sap), 8.7 mg (syrup)
Potassium	1 mg (sap), 163 mg (syrup)
Sodium	7.7 mg (syrup)
Zinc	2.9 mg (syrup)

Nutrition Notes

Leaves, per 100 grams

9.4 g protein

Calcium	548 mg
Phosphorus	84 mg
Potassium	409 mg

Nutrition Notes: Sugar Maple

Sprouts, per 100 grams

2.3 g protein

Calcium	505 mg
Chloride	11.5 mg
Copper	0.5 mg
Iron	7.9 mg
Magnesium	226 mg
Manganese	40.4 mg
Phosphorus	60 mg
Potassium	196 mg
Zinc	2.1 mg

The inner bark, or cambium, of a maple is also edible raw, boiled, or roasted. Or you could dry it, then pound it into a powder, and sift out any leftover fiber. The powder can be mixed in with flour when making bread. Young maple leaves can be eaten raw or cooked; they are sweet and delicate (the leaves turn bitter as they age). Leaves from some maple species have been dried and used as a spice or preservative, particularly on meat. Maple sprouts/shoots are edible as well: boil them.

Common maple varieties include the sugar maple (*Acer saccharum*) and the box elder (*Acer negundo*), both found in much of Northeastern North America; the red maple (*Acer rubrum*) and the black maple (*Acer nigrum*), which primarily grow east of Texas; and, in the southeastern United States, the chalk maple (*Acer leucoderme*).

All maples produce sap for sugaring (turning into syrup), but they vary in amount and quality. Regardless of species, tapping trees is always done the same way. Either you bore a small hole in the trunk on an upward slant and insert a hollow spigot or you drive in a half-tube metal spigot, which makes enough of a hole to get sap without drilling into the tree. A bucket is hung from or placed under the tap to collect sap. At the end of the season, the tap or spigot is removed, and drilled holes are filled with a hardwood dowel. You'd tap in a different spot the following year. Of course, the spring weather has to be right for the sap to flow: chilly nights, warming days. Finding ice in the sap bucket after a freezing night is not unusual.

Growing up, I would help our neighbor Bill Gowen every spring with the sugaring of his eight large, old sugar maples. The daily ritual involved emptying buckets brimming with the clear liquid, which would get boiled down to syrup—a 30-to-1 reduction in a good year. Inside the kitchen, Bill's wife, Maxine Lambert, kept a huge two-burner copper pot boiling all day long to reduce the sap, leaving their house very humid. For my labors, I was rewarded with homemade maple syrup.

I also have another maple memory from my New England childhood: Maple walnut used to be the prime ice-cream flavor. It's amazing what you can do with two trees and a cow!

Marigold

Tagetes spp.

NOTABLE NUTRIENTS OR USES Lutein, strontium, zinc

SAFETY NOTES Toxic to dogs

NATIVE STATUS Introduced



Nutrition Notes: *T. erecta*

Per 100 grams

calories NA, fat NA, carbohydrates NA, protein NA, fiber NA

Calcium	0.11 mg
Iron	1.02 mg
Manganese	0.30 mg
Potassium	0.22 mg
Strontium	1.02 mg
Zinc	0.57 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Flowers 0.5–4 inches, solid yellow, orange, red, or multicolored, petals rectangular with rounded corners. Leaves dark green, stem reddish, leaves toothy and pinnately divided, aromatic when crushed; small flowers; petals rectangular with rounded corners.

TIME OF YEAR Typically summer into fall

RANGE Native to the US Southwest, Mexico, and South America

ENVIRONMENT Full sun; evenly moist, well-drained soil

METHOD OF PREPARATION Petals for tea, flavoring, or coloring

Green Deane's Notes

The blossoms of all marigolds are nontoxic when eaten, but three species in particular—*Tagetes lucida*, *Tagetes patula*, and *Tagetes tenuifolia*—have an agreeable flavor. Their flavor is citrusy (*T. tenuifolia* cultivars are known as Lemon Gem and Tangerine Gem). You should consume only the petals, with their bitter white base removed, and no green parts. Use like any herbal tea, put one or two teaspoons of dry petals in hot water. Let steep three to five minutes.

I also use marigold petals for yellow coloring in various dishes—“the poor man’s saffron,” as they are called. (Just crush the petals for coloring and add to mixture.) That nickname is also given to flowers of the *Calendula* genus, and some sources in the literature don’t differentiate them from marigolds. The problem dates to the early 1500s, when explorers brought marigolds from South America back to Europe. But England already had a plant called the marigold, *Calendula officinalis*. In time the New World blossom became known as the marigold and the *Calendula* flower was designated the pot marigold.

The golden color of marigolds is so intense that feeding marigold extract to young chickens can make their meat and skin more yellow. With laying

hens, it makes their egg yolks yellower, as well as increases the yolks' saturated fat content and lowers their monosaturated fats. A gram of dried marigold flowers can contain more than 15 mg of lutein, one of the yellow pigments classified as xanthophylls. Lutein is considered anti-inflammatory and good for eye health, especially in relation to age-related macular disease.

The USDA uses the common name French marigold for both *Tagetes tenuifolia* and *Tagetes patula*, though Signet, Golden, or Yellow comes before marigold in alternate common names for *T. tenuifolia*. *Tagetes lucida* is the Sweet-Scented Marigold according to the USDA, or the Mexican Marigold per other sources. *Tagetes erecta* is also called the Mexican Marigold, or the Big or Aztec Marigold.

Mayapple

Podophyllum peltatum

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES All parts except very ripe fruit are poisonous. Do not consume at all if pregnant.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial plant 1–1.5 feet tall growing in colonies, unbranched, with single leaf or two leaves on long, light-green stalk that's round and hairless. Leaves resemble a duck's foot, usually up to 1 foot long and 1 foot wide, palmately lobed, five to nine lobes per leaf, hairless. Flowers waxy, cream-colored, with six to nine petals. Fruit oval, green when unripe, yellow when ripe. Leaves tend to shield flower and fruit.

TIME OF YEAR Blossoms in spring, fruit July through September or, in northern areas, when trees are losing their leaves

RANGE Maine to Florida, west to Minnesota and Texas

ENVIRONMENT Moist woods, meadows, floodplains, forest openings

METHOD OF PREPARATION Ripe fruit raw, dried, canned, or as ingredient after deseeding

Green Deane's Notes

The first time I saw a mayapple, I was certain something that strange had to be toxic. And it is, unless totally ripe. An unripe mayapple resembles a lime. Then it turns a soft yellow and wrinkles a little. That's when it's OK to eat (the rest of the plant is often dying at that time). Trim off the ends of the fruit, and do not eat the seeds. The taste is exotic, or peculiar, depending on your opinion.

If you cook mayapples, remove their seeds first. They can be used in compotes, pies, applesauce, marmalade, and jelly (add pectin). Mayapples also can be dried or canned, and they freeze well. The raw ripe fruit can be squeezed to produce juice, which is the basis for a cold drink. Use sparingly. Consumed in larger amounts, the mayapple can be laxative. For those of us old enough to remember Carter's Little Liver Pills, mayapple was a main ingredient that made the pills a laxative—they had nothing to do with the liver at all.

The mayapple has had powerful medicinal uses. A chemical from its roots, podophyllin, can treat cancer. Two drugs are made from the mayapple: etoposide, which is administered for testicular and lung cancer, and teniposide, used on brain tumors and infancy leukemia.

Local names for *Podophyllum peltatum* besides mayapple include raccoon berry, wild lemon, ground lemon, Hog Apple, Indian apple, wild jalap, duck's foot, umbrella leaf, and wild mandrake. It is not related to the Old World mandrake, *Mandragora officinarum*.

Mayflower

Epigaea repens

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES No known safety issues

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Trailing evergreen shrub a few inches high, puts out roots at the joints; leaves broadly ovate, 1–1.5 inches long, rough, with wavy margins and point at end; flowers at ends of branches in dense clusters, white with reddish tinge, very fragrant, five petals form a star

TIME OF YEAR Flowers in April and May

RANGE Eastern North America

ENVIRONMENT Damp, shaded, mossy, rocky woods; prefers moist, acidic soil and shade

METHOD OF PREPARATION Blossom petals eaten fresh on the trail or in salads



Green Deane's Notes

It was an annual family ritual. Every spring when the snow had finally melted for good—about mid-April—we'd go through the low Maine mountains picking the first bloom of the season, *Epigaea repens*, the mayflower. My mother had her favorite mayflower haunts, and we would visit them all in the course of the short season.

Mind you, we didn't eat the blossoms, though they are edible. They make a pleasant and refreshing trailside nibble. Collecting was more primal: After a long, hard winter, we just took the fragrant plants home as a sign of spring. My mother had a superstition about cut flowers in the house, but mayflowers were exempt. I'm still not sure why they got a pass. When I moved to Florida years later and smelled orange blossoms for the first time, I thought they were mayflowers.

Gathering mayflowers is also where I first heard about "Robin Hood's barn." One day while out for mayflowers in New Gloucester, my mother remarked, "You're certainly going around Robin Hood's barn to get there." My stepfather, who was driving, said he was. When I asked about Robin Hood's barn, my mother told me to be on the lookout for it. Never did see it. It took me years to learn that "going around Robin Hood's barn" means taking the long way.

These low-growing flowers, also known as Trailing Arbutus, are the subject of an 1856 poem by John Greenleaf Whittier, "The Mayflowers." Whittier had received them as a gift that year, with a note that said, "all our people gather them at this season and send them to their friends who have them not. There is such meaning in the Mayflower to all descendants of the Pilgrims and to all lovers of freedom." It so happens that through one maternal great-grandmother, I am a *Mayflower* descendant—and also a descendant of Susanna North Martin, who was hanged in Salem in 1692, accused of being a witch.

Maypop

Passiflora incarnata

NOTABLE NUTRIENTS OR USES Vitamin C, protein, calcium, potassium

SAFETY NOTES Use in moderation. See below.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Woody trailing vine up to 30 feet long that climbs with tendrils. Large white flowers with pink or purple centers; leaves three-lobed; fruit shape and size of an egg, ripens from green to yellow or orange.

TIME OF YEAR Fruit ripens around August in South, toward fall up north

RANGE From Florida north to Pennsylvania, west to Kansas and Texas

ENVIRONMENT Thickets, disturbed ground, unkept pastures, roadsides, railroads, top not bottom of berms. Full sun, well-drained soil. Not in damp areas.

METHOD OF PREPARATION Fruit fresh, cooked, made into jelly or a drink; leaves boiled

Nutrition Notes

Flowers, per 100 grams

91–830 g fat, 2.1–7.65 g carbohydrates, 1.32–12 g protein, 7.3–26.5 g fiber

Vitamin B2 (riboflavin)	0.01–0.05 mg
Vitamin B3 (niacin)	0.11–0.95 mg
Vitamin C	1.1–10 mg
Calcium	50–460 mg
Iron	0.08–0.7 mg
Magnesium	2.75–25 mg
Manganese	0.02–0.21 mg
Phosphorus	4–37 mg
Potassium	22–200 mg
Sodium	0.06–0.5 mg
Beta-carotene	0.53–4.8 mg

Nutrition Notes

Fruit, per 100 grams

3.3–12 g fat, 2.1–7.65 g carbohydrates, 2.3–8.4 g protein, 7.3–26.5 g fiber

Calcium	14.50–51 mg
Phosphorus	4.3–15.6 mg

Green Deane's Notes

Maypop is a two-season name. The plant can blossom in May, but the fruits don't get big enough to step on and "pop" until June or July. They start out green and hollow and eventually fill with a jellyish flesh with seeds while turning yellow on the outside.

Yellow maypop fruit are edible raw in their entirety. Green ones can be cooked, or their sweet-and-sour insides can be eaten raw; some of the green outside can also be eaten raw. The pulp-covered seeds in a green or yellow maypop are edible. Like other fruit, maypops can be made into a jelly or

beverage. You can also steam and eat the leaves, like greens. But moderation is the key word. There is a case in the medical literature of someone using maypop herbally and requiring medical attention. The plant is full of GABA, essentially a sedative, so use caution.

Finding the fruits can be sporadic since woodland creatures like to dine on them at night. The maypop vine smells bad ... like an old rubber shoe. The fruit, fortunately, does not share that aroma (too much). Consider the general shape of the fruit and leaves, and it will make sense that the maypop is a relative of the papaya.

Maypop is a common ingredient in herbal sedatives in Europe. It also has pharmaceutical uses there for treating anxiety and insomnia. The active ingredient is said to be unknown, but we know the plant contains a lot of gamma-aminobutyric acid (GABA), an inhibitory neurotransmitter. Its sedative action is thought to come from MOAI activity (monoamine oxidase inhibitors).

P. incarnata is one of 500-plus kin in the passionflower genus, *Passiflora* (see Passionfruit, [page 216](#)). Despite what you may have read on the internet, *P. incarnata* doesn't contain cyanide. The *American Pharmaceutical Association Practical Guide to Natural Medicines* notes that these erroneous sources may have the *incarnata* species confused with *P. caerulea*, the ornamental Blue Passionflower, which *does* contain cyanide.

Mesquite

Prosopis spp.

NOTABLE NUTRIENTS OR USES Protein, carbohydrates, fiber, calcium, phosphorus

SAFETY NOTES Can make horses, cattle, and goats ill; see safety notes below.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION *Prosopis velutina*: Spreading thorny shrub or small tree up to 30 feet tall and 20 feet wide, with well-developed crown and trunk up to 2 feet in diameter. Bark reddish brown and smooth when young but grayish brown, rough, thick, in long, narrow strips when older. Young branches are green and grow in a zigzag pattern. Leaves alternate, bipinnate, 3–6 inches long, dark or dusky green with gray hairy surface and paler underside, 2-inch-long yellow thorns in pairs at base. Flowers yellow-green catkins, about 2–3 inches long, each with bell-shaped calyx and five petals.

Seedpods tan, straight or slightly curved, flat, 3–8 inches long, single or in drooping clusters, covered with short velvety hairs when young.

TIME OF YEAR Pods mature in early summer, drop by early fall

RANGE Texas, neighboring states, and Mexico

ENVIRONMENT Thrives in arid areas but also responds well to irrigation

METHOD OF PREPARATION Young pods raw or cooked, mature pods and beans milled together into a flour, beans made into cakes, flowers raw or roasted, and more

Nutrition Notes

Per 100 grams

Pods: 3 g fat, 78.3 g carbohydrates, 13.9 g protein, 27.7 g fiber

Seeds: 7.8 g fat, 21.8 g carbohydrates, 65.2 g protein, 2.8 g fiber

Flowers: 3.2 g fat, 65.8 g carbohydrates, 21 g protein, 15.5 g fiber

Calcium 1310 mg (flowers)

Phosphorus 400 mg (flowers)

Green Deane's Notes

Many people have used the mesquite for flavor when barbecuing. But long before there was a barbie, Native Americans were harvesting pods off several species of mesquite. Among them were *Prosopis chilensis*, *P. glandulosa*, *P. glandulosa* var. *glandulosa*, *P. glandulosa* var. *torreyana*, *P. pubescens*, and *P. velutina*, perhaps the preferred variety.

The Natives knew a good thing when they tasted it. Fruits (pods) usually in summer; they are harvested either before summer seasonal rains or in late fall long after the rains. Seedpods are the main food from the mesquite. The species is adapted to two rainy seasons in its native area—summer and winter—and this results in two fruiting phases. The seeds should not be eaten unless cooked. Dry pods are milled entirely, then usually ground into a gluten-free flour that is high in fiber and protein. The flour can be mixed

with water to make cakes. Do not collect pods from the ground; instead, pick them off the tree. Flowers from mesquite are edible as well, raw (suck on a catkin for sweetness) or roasted. Some people collect the tree's white resinous secretions and chew it like gum.

Before you do anything with pods, taste them. They aren't always sweet or even palatable. If you don't like the pods from a particular tree, try a different tree. Avoid any pods that are moldy, stained black, or have been attacked by a boring beetle. Always harvest pods off the tree, not the ground, because on the ground they may be infected with a fungus.

Other uses include: Grinding, adding water, and letting the mixture ferment; pods can be used as a sugar substitute (they're 16% sugar); fresh pods can also be pounded and the juice drunk like milk.

The three most common *Prosopis* species are the honey mesquite (*P. glandulosa*), screwbean mesquite (*P. pubescens*), and Velvet Mesquite (*P. velutina*)—which grows the largest of all mesquites. One might confuse the many mesquites with the many *Acacia* varieties. A major difference is that every flower on a mesquite has 10 stamens (the male parts), but acacias have more than 10 stamens per flower.

Milkweed

Asclepias syriaca

NOTABLE NUTRIENTS OR USES Potassium, calcium, magnesium, vitamin A, vitamin C

SAFETY NOTES See detailed safety notes below.

NATIVE STATUS Native



Nutrition Notes

Per 100 grams

11 calories, 0.5 g fat, 54.4 g carbohydrates, 2 g protein, fiber NA

Vitamin A	1210 RE
Vitamin B2 (riboflavin)	0.04 mg
Vitamin C	391 mg
Calcium	437 mg
Chloride	154 mg
Copper	0.4 mg
Iron	6.3 mg
Magnesium	194 mg
Manganese	1.8 mg

Phosphorus	146 mg
Potassium	619 mg
Sodium	21 mg
Zinc	0.8 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Erect perennial 3–6 feet tall with stout, hairy stems and long, oval leaves; may secrete milky liquid. Pink, five-petal flowers in dense, drooping umbels. Rough, fat pods with silky sticky floss inside (with seeds present when young).

TIME OF YEAR Gather leaves in early spring when they first open and seedpods, flowers, and buds during the summer.

RANGE Eastern North America

ENVIRONMENT Upland prairies, fields, meadows, waste places; prefers full sun

METHOD OF PREPARATION Boiling in several changes of water, batter-frying

Green Deane's Notes

If you read only medical references about milkweed, they will frighten you with references to cardiac glycosides and may give you the impression that if you as much as look at milkweed, you might drop dead. The truth is, you should never eat raw milkweed. Young shoots, leaves, and pods of *Asclepias syriaca*—the most common species of milkweed—are edible if you simmer them until they're tender. They've even been described as “delicately flavored.” *A. syriaca*'s buds, flowers, and seeds are also edible. Many other varieties of milkweed are too bitter or possibly toxic.

My personal warning: Do not eat any parts that are still bitter after cooking, and avoid milkweed with skinny leaves. Those tend to contain more of the harmful compounds. You'll also want to rub the fuzz off shoots before

cooking them. Where I live, milkweed has long, skinny, twisting pods. They definitely are not edible.

And you need to follow some specific directions for cooking the leaves, shoots, and pods. Parboil for 3 minutes, discard the (bitter) water, and refill the pot with clean water for further boiling. Repeat this process three times, then boil them another 15 minutes before seasoning. A pinch of baking soda can be added during cooking to break down the plant's fibers and improve flavor.

Some people say to put the leaves/shoots/pods in cold water and bring it to a boil, as a way to reduce bitterness. Others contend you should put them in already boiling water, for the same reason. You can experiment to see if one works better than the other for you.

After parboiling young pods, you can slit them in half, roll them in a cornmeal or flour mixture, and fry or freeze for future use. Flower buds and clusters can also be batter-fried. If you steam the buds, use them like okra in soups or stews. You can freeze cooked leaves, buds, and flowers to eat in the future.

Be careful not to mistake poisonous dogbane for milkweed. The differences are that the stems and underside of leaves are slightly hairy on milkweed (but not on dogbane) and milkweed's leaves have prominent, light-green veins (dogbane's are subtle and cream-colored) and do not squeak when rubbed, as dogbane leaves do. Also, milkweed leaves grow smaller as you go up the stalk, while dogbane leaves are slightly larger, and a milkweed stalk is hollow but dogbane's is solid.

Miner's Lettuce

Claytonia perfoliata

NOTABLE NUTRIENTS OR USES Vitamin C, potassium, phosphorus, calcium

SAFETY NOTES Avoid collecting it from impaired water sources.

NATIVE STATUS Native



Nutrition Notes

Leaves, per 100 grams

20 calories, 0.3 g fat, 3.9 g carbohydrates, 2.8 g protein, 0.9 g fiber

Vitamin A	109 RE
Vitamin B1 (thiamine)	0.08 mg
Vitamin B2 (riboflavin)	0.13 mg
Vitamin B3 (niacin)	0.2 mg
Vitamin C	29.4 mg
Calcium	52 mg
Iron	2.9 mg
Magnesium	40 mg
Phosphorus	79 mg
Potassium	317 mg

Sodium

18 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Look for one obvious, round leaf, with a stem through the middle. (Don't think grocery store lettuce, in terms of shape.) White flowers in racemes.

TIME OF YEAR Cool spring weather

RANGE Western United States plus Georgia and New Hampshire

ENVIRONMENT Shady areas with loose, moist soil; tolerates moderate frost

METHOD OF PREPARATION Raw, steamed

Green Deane's Notes

This species is a real foraging find, though you generally find it only in the West. After all, it's named for California's gold rush miners, who ate it for their health.

Claytonia perfoliata used to be in the genus *Montia* and has an older synonymous name, *Montia perfoliata*. It is distantly related to purslane. When those who live in the West see dollarweed for the first time, they think it's related to miner's lettuce. It isn't, but both plants have peltate stems—attached to the middle of the leaf, not the side.

Eaten raw in salad or steamed, miner's lettuce is refreshing: mild, crunchy, and tender. It's also easy to identify—your greatest challenge is making sure it is growing in wholesome water.

Mock (Indian) Strawberry

Potentilla indica

NOTABLE NUTRIENTS OR USES Vitamin C, protein, potassium, phosphorus, calcium

SAFETY NOTES See safety discussion below.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Low, trailing vine with roots at the nodes. Single flower on long stem, five yellow petals notched at tip, five sepals. Long-stemmed leaves have three blunt-toothed leaflets, strawberry-like fruit, seeds on outside. Can be invasive.

TIME OF YEAR Fruits in September in temperate climes, sooner in warm areas

RANGE Most of the US except for the Rocky Mountain states and upper New England

ENVIRONMENT Prefers moist, well-drained soils, sunny locations with passing shade

METHOD OF PREPARATION Berries raw, leaves raw in salads, cooked as a potherb, or dried for tea

Nutrition Notes

Per 100 grams

57 calories, 4.5 g fat, 49 g carbohydrates, 4 g protein, 3.6 g fiber

Vitamin C	6.3 mg*/79 mg**
Calcium	0.13 mg
Iron	0.01 mg
Magnesium	0.01 mg
Phosphorus	0.08 mg
Potassium	0.28 mg

*Per 100 ml juice **Per 100 g leaves

Green Deane's Notes

One of the first things my uncle's second wife said to me when I moved south was, "They have strawberries here with no taste." And she was right—almost.

Potentilla indica, or mock strawberry (or Indian strawberry, per the USDA's preference), indeed has little flavor, but it's not a Southern specialty. It grows in most of the United States as well as Canada. Flavorless or not, my cousins and I ate a lot of them in Florida.

At first glance, *P. indica* looks like a brilliantly red, juicy strawberry—so much so that it was once believed to be a real strawberry and called *Fragaria indica*. And therein lies its public relations problem: It's not what people expect, so a lot of commentators dismiss it as worthless, but that's a bit unfair. Nutritionally speaking, the fruit is 3.4% sugar, 1.5% protein, and

1.6% ash; plus, the juice and leaves contain respectable amounts of vitamin C (see box).

What's more, an 8-foot patch will produce about 5.5 ounces fruit annually—about the same as wild strawberries—and you can cook the leaves as a green. Some folks think the fruit has a hint of watermelon flavor; others say it's sour. In any case, there's certainly no harm adding some of the plant to your wilderness salad.

Be forewarned, though, that there is some negative exaggeration surrounding this plant. While many sources state the fruit is edible but tasteless, some translate that into “not suitable for human consumption,” “not edible,” or even “poisonous.” Herbalist and researcher James Duke, PhD, addresses the issue specifically in his *Handbook of Medical Weeds*, in which he says the plant is “often described as ‘poisonous.’ I have eaten hundreds and find the word *insipid* more accurate.”

Likewise, I've eaten many mock strawberries and have lived to tell the tale, but some 45 years after I had swallowed my first *P. indica* (then called *Duchesnea indica*), I read in John “Lofty” Wiseman's *SAS Survival Handbook* that the berries are “highly poisonous, sometimes fatally.” Plus, an Indian herbalist describes *P. indica* as mildly poisonous (in addition to a treatment for cancer). In my experience, the leaves, aside from making a serviceable potherb, make a nice tea when dried. Mock strawberries can also help stretch other berries when making jams and jellies, and on their own they make a light, refreshing jelly or juice for hot summer days.

Monkey Puzzle Tree

Araucaria araucana

NOTABLE NUTRIENTS OR USES Starch, protein, calcium

SAFETY NOTES No known safety issues

NATIVE STATUS Nonnative

Green Deane's Itemized Plant Profile

IDENTIFICATION Pyramid-shaped tree 90–130 feet tall, 3–4 feet in diameter, male or female. Branches grow horizontally in opposite pairs, with whorls of five stems. Leaves shiny green, triangular, pointed, thick, ferociously sharp. Female cones round, dark brown, softball-size, fall off at maturity, contain about 200 seeds (nuts) each. Nuts have brown or orange outer skin with two small papery wings; inside, are whitish, 1–1.5 inches long, narrow.

TIME OF YEAR Whenever you find female cones on the ground

RANGE South and West

ENVIRONMENT Tolerates almost any type of soil, but prefers well-drained, slightly acidic, volcanic. Produces the heaviest in regions with cool summers

METHOD OF PREPARATION Seeds raw, boiled, ground, as ingredient



Nutrition Notes

Per 100 grams

209 calories, 16 g fat, 1 g carbohydrates, 13 g protein

Sodium	290 mg
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Green Deane's Notes

Cornwall, England, circa 1850: The owner of an unusual tree at Pencarrow Garden was showing it off to friends when one said, “It would puzzle a monkey to climb that.” At the time the tree was rare in British gardens (it isn’t nowadays) and had no common name in English. It became known as the Monkey Puzzler, but monkey puzzle eventually caught on.

Any monkey trying to climb this tree would be not only puzzled but likely injured by its razor-sharp leaves. There is speculation the armament developed to dissuade dinosaurs from eating the tree. It is that ancient; some specimens around today may be 1,000 years old.

Native to South America, the species gets its botanical name *araucana* from Chile’s Indigenous Araucanian people. It is still the official tree of Chile, though its numbers have dropped there so much, it is now protected. Surprisingly, the monkey puzzle is in the pine family, closely related to the

bunya bunya (*Araucaria bidwillii*), and the heavy cones from either would hurt if they fell on you.

Like another close relative, the Norfolk Pine (see [page 205](#)), the monkey puzzle has edible “pine nuts”—actually, seeds from the cones. These delicious seeds can be boiled, eaten raw, or used in recipes like you would store-bought pine nuts, which they taste slightly similar to. Ground, they make a good flour substitute. Monkey puzzle seeds are about two-thirds starch and high in calcium too. They also contain antioxidant phenols, though mostly in the coating that you should peel off before consuming.

Moringa

Moringa oleifera

NOTABLE NUTRIENTS OR USES Calcium, vitamin A, protein

SAFETY NOTES No known safety issues

NATIVE STATUS Naturalized



Green Deane's Itemized Plant Profile

IDENTIFICATION Slender tree to about 35 feet, drooping branches, brittle stems, corky bark. Leaves feathery, pale green, tripinnate. Flowers white or cream, fragrant, in sprays of five, with yellow stamens. Pods are green, but then turn tan, followed by brown; pods are triangular, ribbed, pendulous, splitting lengthwise into three parts when dry, containing about 20 pea-size seeds encased in papery coating.

Nutrition Notes

Leaves, per 100 grams

64 calories, 1.4 g fat, 9.4 g protein, 2 g fiber

Vitamin A	7564 IU
Vitamin B1 (thiamine)	0.26 mg
Vitamin B2 (riboflavin)	0.66 mg
Vitamin B3 (niacin)	2.22 mg
Vitamin B5 (pantothenic acid)	0.12 mg
Vitamin B6 (pyridoxine)	1.2 mg
Vitamin B9 (folic acid)	40 mcg
Vitamin C	51.7 mg
Calcium	185 mg
Copper	0.11 mg
Iron	4 mg
Magnesium	45 mg
Manganese	1.06 mg
Phosphorus	50 mg
Potassium	461 mg
Selenium	0.9 mcg
Sodium	9 mg
Zinc	0.8 mg

Nutrition Notes

Flowers, per 100 grams

50 calories, 0.8 g fat, 7.1 g carbohydrates, 3.6 g protein, 1.3 g fiber

Vitamin A	74 IU
Vitamin B1 (thiamine)	0.05 mg
Vitamin B2 (riboflavin)	0.07 mg
Vitamin B3 (niacin)	2.22 mg
Vitamin B5 (pantothenic acid)	0.13 mg
Vitamin B6 (pyridoxine)	1.2 mg
Vitamin B9 (folic acid)	44 mcg
Vitamin C	141 mg
Calcium	51 mg
Phosphorus	90 mg

TIME OF YEAR Leaves most of the year, seedpods in late spring and summer

RANGE native to India; cultivated widely

ENVIRONMENT Grows best in sandy soil, tolerates poor soil, loves sun and heat

METHOD OF PREPARATION Leaves, pods, and seeds raw or cooked, flowers cooked, leaves powdered, roots for condiment

Nutrition Notes

Pods, per 100 grams

37 calories, 0.2 g fat, 8.53 g carbohydrates, 2.1 g protein, 3.2 g fiber

Calcium	30 mg
Copper	0.084 mg
Iron	0.36 mg
Magnesium	45 mg
Phosphorus	50 mg
Potassium	461 mg
Selenium	0.7 mg (pods)
Sodium	42 mg
Zinc	0.45 mg

Nutrition Notes

Powder, per 100 grams

500 calories, 33.33 fat, 66.67 g carbohydrates, 33.33 g protein, 33.33 g fiber

Vitamin A	6667 IU
Vitamin C	40 mg
Calcium	2667 mg
Iron	6 mg

Green Deane's Notes

If you have a warm backyard, think twice before you plant a Moringa. This tree—which has many edible, nutritious parts and medical applications that saves lives on a daily basis; a tree that can rescue millions from starvation—grows incredibly fast and large in good conditions, overwhelming

whatever space you allot to it. It can reach monster proportions in one season.

I had two Moringas (mom and daughter), and every year I cut off 15- to 20-foot branches. I finally ended up cutting both trees back to three-foot stumps each spring. The tree grows more than 10 feet a year—and it requires constant attention. Unattended, the tree grows into a spindly giant. Despite the impressive growth, it's extremely brittle: You could easily break a 4-inch-thick branch (it's nice to feel like Hercules now and then). Those branches lent themselves to a common phrase in India when someone is being too demanding: “Don't push me up a Moringa tree.”

While gigantic growth can be a headache in suburban yards, it's great for impoverished countries with a lot of mouths to feed. Moringa is one of the world's most useful trees, providing a variety of food, medicine, and other products. It's being planted extensively in poorer areas of the world, some 400,000 trees in Rwanda alone.

Moringa leaves contain four times as much vitamin A as carrots, seven times the vitamin C of oranges, quadruple the calcium of milk, thrice the potassium of bananas, and three times the iron of spinach. Leaves, roots, bark, flowers, and other parts of the Moringa reportedly have antitumor, antiepileptic, anti-inflammatory, antiulcer, cholesterol-lowering, antibacterial, and antifungal activities and can be used to treat cardiovascular conditions, high blood pressure, diabetes, and other ailments. A blue dye can be made from its sap. *M. oleifera* (one of only 13 members of the Moringaceae family) apparently helps in water purification, a prime preventer of illness in the world.

Now you know why Moringa is called “the miracle tree.” It's also called the horseradish tree, its common name per the USDA. The roots can be chopped up with vinegar and seasoning to make a condiment resembling horseradish in taste (but use it sparingly, for it contains an alkaloid that can

cause gastrointestinal upset). Young pods, called drumsticks, can be cooked and used like green beans, though they have an asparagus taste. The seeds in the pods are edible too. Moringa leaves can be eaten raw or cooked like spinach—I have a restaurant-owning Asian friend who makes a great soup out of them—or dried and ground into a powder used for flavoring. Cooked Moringa flowers taste like mushrooms. A superior cooking oil comes from the seeds, though the seeds themselves are not inspiring in taste.

Morning Glory

Ipomoea spp.

NOTABLE NUTRIENTS OR USES Vitamin A, potassium, calcium, magnesium

SAFETY NOTES *Ipomoea violacea*, a light-blue morning glory with heart-shaped leaves, has lysergic acid in its seeds and is toxic to dogs. Other species (including *I. carnea*) are toxic to dogs as well.

NATIVE STATUS Native and/or introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION *Ipomoea aquatica*, aquatic or semiaquatic annual to 70 feet long. *I. pandurata*, vigorous, twining vine 15–30 feet long. Leaves heart-shaped, olive green, with purple stems. Flowers large, white, with ruby throat. Roots as much as a yard down.

TIME OF YEAR *I. aquatica*, Year-round where warm, seasonal in warm areas with moderate winters. *I. pandurata*, summer.

RANGE Native to southern California and Baja California

ENVIRONMENT Full sun. *I. aquatica*, in water or wet sand; not below 70°F. *I. pandurata*, preferably moist soils but can tolerate dry conditions after established.

METHOD OF PREPARATION Depends on part and species, but usually raw, steamed, roasted, or baked

Green Deane's Notes

Nearly every edible morning glory I know of has a large white blossom, possibly with a bright-red throat. One exception: A small, white morning glory with a ruby throat and deeply palmately seven-lobed leaves, the alamo vine, *Merremia dissecta*, is not edible. (*Merremia* species belong to Convolvulaceae, the morning glory family.) Red- and pink-blossomed morning glories are iffy—some with edible parts, some not. The species with blue to purple blossoms are not edible, and might have mind-altering seeds.

Nutrition Notes: *I. aquatica*

Per 100 grams

19 calories, 0.2 g fat, 3.13 g carbohydrates, 2.6 g protein, 2.1 g fiber

Vitamin A	6300 IU
Vitamin B1 (thiamine)	0.03 mg
Vitamin B2 (riboflavin)	0.1 mg
Vitamin B3 (niacin)	0.9 mg
Vitamin B5 (pantothenic acid)	0.14 mg
Vitamin B6 (pyridoxine)	0.1 mg
Vitamin B9 (folic acid)	57 mcg
Vitamin C	55 mg
Calcium	77 mg
Copper	0.02 mg
Iron	1.67 mg
Magnesium	71 mg

Manganese	0.16 mg
Phosphorus	39 mg
Potassium	312 mg
Selenium	0.9 mg
Sodium	113 mg
Zinc	0.18 mg

Nutrition Notes: *I. batatas*

Leaves, per 100 grams

42 calories, 0.51 g fat, 8.82 g carbohydrates, 2.49 g protein, 5.3 g fiber

Vitamin A	3778 IU
Vitamin B1 (thiamine)	0.16 mg
Vitamin B2 (riboflavin)	0.35 mg
Vitamin B3 (niacin)	1.13 mg
Vitamin B5 (pantothenic acid)	0.22 mg
Vitamin B6 (pyridoxine)	0.19 mg
Vitamin B9 (folic acid)	1 mcg
Vitamin C	11 mg
Vitamin K	0.3 mg
Calcium	78 mg
Iron	0.97 mg
Magnesium	70 mg
Phosphorus	81 mg
Potassium	508 mg
Selenium	0.9 mcg
Sodium	6 mg
Lutein and zeaxanthin	14.72 mg

Thus, I can glance at a morning glory and know if I am interested or not. What is edible on a (white) morning glory varies with the species. For *Ipomoea pandurata*, the Man of the Earth, it's the roots, when they're boiled. Boil them twice if the roots are older and larger because they may have gotten acrid with age. You can steam and eat young leaves and calyces of the night-blooming *I. alba*, aka *Calonyction aculeatum* (moonflower or moon vine).

I. aquatica (Swamp Morning Glory), a noxious weed, is packed with vitamin A, just like *I. batatas*—much better known as the sweet potato. *I. aquatica*'s young leaves and stems can be steamed, boiled, stir-fried, cooked in soups and stews, or tossed in salads raw or lightly blanched. You might want to cook the leaves and stems separately because of their different textures. While the rest of the Swamp Morning Glory plant is technically edible, only those growing tips are eaten. Older leaves get tough and full of plant latex.

The leaves from either Swamp Morning Glory or sweet potato are more nutritious than a baked sweet potato—the root from an *I. batatas* plant, that is. The root does have substantially more calories, though. If I am looking for energy, I eat the roots. If I want nutrients, I eat the leaves. (This is similar for grapes: The fruit has more energy, the leaves far more nutrients.)

Let me revisit the alamo vine. There are reports that it was used in the Caribbean for flavoring. It has a slight almond flavor and aroma, which is usually indicative of cyanide. Of course, we have no idea how it was prepared or used. The cyanide content makes me consider it inedible, though it does have a white blossom and ruby throat.

Mountain Ash (Rowan)

Sorbus americana, Sorbus aucuparia

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, vitamin E, potassium

SAFETY NOTES See below.

NATIVE STATUS Native and/or introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION *Sorbus americana*: Tree usually shorter than 40 feet. Leaves alternate, pinnately compound, 6–10 inches long, dark green on top, paler on bottom; 11–17 leaflets opposite, lance-shaped, serrated. Small white flowers in showy clusters 3–5 inches across. Fruit little red berries in bunches.

TIME OF YEAR Flowers late spring to early summer; fruit late summer to fall, may persist through the winter

RANGE the eastern US and Canada

ENVIRONMENT High-elevation cool, moist habitats—borders of swamps, rocky hillsides, woods, upland roadsides, under semi-open stands of birches, fir, or spruce. Prefers full sun

METHOD OF PREPARATION Raw if cultivated; wild berries made into jelly and other flavored spreads and liquids



Nutrition Notes: *S. aucuparia*

Per 100 grams

calories NA, 4.66% fat, carbohydrates NA, 5.44% protein, 8.02% fiber

Vitamin C	10 mg
Vitamin E	282–489 mg
Calcium	29.9 mg
Copper	0.29 mg
Iron	2.42 mg
Magnesium	27.84 mg
Manganese	0.5 mg
Phosphorus	12.3 mg
Potassium	154 mg
Zinc	0.86 mg

Green Deane's Notes

Long before Harry Potter, wands made from rowan wood were popular talismans to ward off evil. The Harry Potter series borrowed the ancient Celtic view toward the rowan tree, also known as the European mountain ash, *Sorbus aucuparia*. The Celts and other early people of the British Isles thought the rowan had magical protective powers. That's one of two reasons the rowan is also called witchwood. The other reason is the pucker

at the bottom of a rowan berry resembles a pentagram, which is associated with witchcraft.

The leaves and flowers of the European mountain ash may be used to make tea; those from the American mountain ash, *Sorbus americana*, are not consumed in any way. But the most common edible from mountain ash trees is the fruit—berries rich in vitamins A and C that grow in clusters. The berries also contain malic acid and parasorbic acid. Malic acid is what makes apples tart. Parasorbic acid can upset the stomach when the fruit is consumed raw, but cooking changes it to sorbic acid, which is not a problem.

While berries from cultivated mountain ash trees may be eaten raw when ripe or cooked with meat, wild berries are typically made into jam, jelly, syrup, wine, or vinegar (you'd probably eat them raw only after frost, which makes them sweeter). The fruit's flavor is strong and astringent when the berries are young but moderates with age. A rowan berry jelly would pair well with sharp cheese. The berries have a lot of pectin and can be used to thicken jelly.

The American and the European mountain ash look similar, except the American has red stems and the European's stems are yellowish. Neither species, nor any of the more than 10 other edible members of the genus, is a true ash. They resemble ash trees (*Fraxinus* genus) but are closely related to apple trees. Other North American varieties include *S. decora*, Northern Mountain Ash; *S. scopulina*, Greene's or Cascade Mountain Ash; and *S. sitchensis*, western mountain ash. The tree is occasionally called the whitebeam.

Mountain ash berries are pomes—they have seeds at their core. A pound of berries yields about 388,000 seeds. And those seeds do contain compounds that upon digestion release small amounts of cyanide. Cooking or processing the fruit generally negates the threat, as it breaks down cell

structures and lets enzymes go to work. I have not heard of any cyanide-related incidents from eating mountain ash fruit.

Mulberry

Morus spp.

NOTABLE NUTRIENTS OR USES Potassium, calcium, phosphorus, vitamin C, vitamin A

SAFETY NOTES Unripe berries can be toxic. The unripe berries and uncooked leaves can be slightly psychotropic. Some people are allergic to the pollen, and others get dermatitis from the sap.

NATIVE STATUS Native and introduced



Nutrition Notes

Per 100 grams

43 calories, 0.39 g fat, 9.8 g carbohydrates, 1.44 g protein, 1.7 g fiber

Vitamin A	25 IU
Vitamin B1 (thiamine)	0.03 mg
Vitamin B2 (riboflavin)	0.1 mg
Vitamin B3 (niacin)	0.62 mg
Vitamin B6 (pyridoxine)	0.05 mg

Vitamin B9 (folic acid)	6 mcg
Vitamin C	36.4 mg
Vitamin K	7.8 mcg
Calcium	39 mg
Copper	0.6 mg
Iron	1.85 mg
Magnesium	18 mg
Phosphorus	38 mg
Potassium	194 mg
Selenium	0.6 mcg
Sodium	10 mg
Zinc	0.12 mg
Beta-carotene	9 mcg
Lutein and zeaxanthin	136 mcg

Green Deane's Itemized Plant Profile

IDENTIFICATION Tree rarely exceeding 40 feet in height. Leaves alternate, simple, often lobed, toothed on edges. Fruit looks like a long blackberry when ripe, about an inch long, white when first appears, turns red and then dark purple or black.

TIME OF YEAR Late spring

RANGE Red mulberry: eastern half of the United States; white mulberry: introduced but widespread

ENVIRONMENT Hardwood forests, abandoned farms and fields, roadsides, residential parking lots. Likes moist soil

METHOD OF PREPARATION Fruit raw or as ingredient, young leaves cooked

Green Deane's Notes

I will admit I used to use mulberries to get dates. When they were in season, I would bake mulberry pies and share them at this or that social event. They

demonstrated I could find food and find my way around a kitchen. Plus, the mulberries were delicious and healthy.

In my case, the berries were from *Morus rubra*, the red mulberry. There's also the black mulberry, *Morus nigra*, and the Asian or white mulberry, *Morus alba*. The latter is the sole food source for the silkworm, *Bombyx mori*, named after the mulberry genus *Morus*.

You can use mulberries just as you would blueberries, strawberries, or blackberries—in pies and other pastries, muffins, jam, wine, a cordial. They are much like blueberries in flavor. Young leaves of any mulberry species are edible boiled, though they can be tough. Be warned: The berries can stain everything purple. They also have had medical uses, primarily for glucose control.

Mulberry trees grow rapidly and fruit young. One spring I trimmed my mulberry and used its branches as stakes to hold up branches of a fruiting nectarine. The stakes rooted and grew. Not one to get in nature's way, I dug them up and gave them to a friend. They are still flourishing.

The genus name *Morus* has the same origins as the name of the Greek god Moros, who drove mortals to their death. It's where we get the English word "morose." To contemporary Greeks, the mulberry is "mouro," and the Peloponnesian peninsula is often called Morea because it's shaped roughly like a mulberry leaf ... if you've had a glass or two of retsina.

Nandina

Nandina domestica

NOTABLE NUTRIENTS OR USES No nutritional information available; protein

SAFETY NOTES Unripe berries toxic. Seeds inedible. See detailed preparation notes below. Toxic to cats, dogs, and grazing animals

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen, bushy shrub, erect, to 10 feet high and 5 feet wide, with stems that resemble bamboo. Leaves alternate, lance-shaped, bipinnately compound, with many 1- to 2-inch oval, pointed leaflets, often pinkish when young, turns light green, can be tinged red in winter. Terminal clusters of tiny white or pink flowers in early summer. Round berries, green ripening to red, a third of an inch in diameter, two-seeded

TIME OF YEAR Young leaves anytime, berries in fall and winter

RANGE Texas, the Deep South, north to Maryland and Ohio, west coast

ENVIRONMENT Prefers rich soil, dislikes sandy soil, but otherwise highly adaptable: sun or shade, mild or cooler climates

METHOD OF PREPARATION Berries without seeds made into jelly; young leaves boiled in two changes of water

Green Deane's Notes

Nandina—unjustly maligned or rightly feared?

Let's start with the 875 cases reported to the Texas poison control center between 2000 and 2015 of children (age 5 and under) eating nandina berries. A report concluded, however, that "*N. domestica* ingestions among young children generally do not result in serious outcomes." Like raw elderberries, nandina's fruit contains glycosides that convert to hydrogen cyanide when ingested, which can cause gastrointestinal distress.

Some sources say nandina berries aren't even edible (their seeds are definitely inedible). You probably shouldn't eat them raw—they aren't particularly tasty, anyway. That's why they're best used, deseeded, in making jelly or pie combined with grapes, apples, or other berries. Nandina leaves are edible, though not great, when young and tender, but boil them twice, changing water at one point. The leaves are 9.9% protein; the fruit, 5%.

Nandina domestica is monotypic, the only plant in its genus, so it is not a bamboo despite its common names of Heavenly Bamboo and sacred bamboo. With showy color-changing foliage that gives the shrub a lacy appearance, it's often grown as an ornamental. The Japanese consider nandina's aromatic wood excellent for toothpicks, and they plant it outside home entrances to ward off bad dreams. The plant has berberine, a chemical with many healthful herbal applications. It also makes an alkaloid called nantenine, which blocks the effects of the drug Ecstasy. (One does wonder how they figured that out.)

Nasturtium

Tropaeolum majus

NOTABLE NUTRIENTS OR USES Vitamin C, potassium, calcium, catechins

SAFETY NOTES Do not eat a large quantity because the plant contains oxalic acid.

NATIVE STATUS Naturalized in some areas



Nutrition Notes

Per 100 grams

30 calories, 0 g fat, carbohydrates NA, 2 g protein, 2 g fiber

Vitamin C	71.5 mg
Calcium	33.72 mg
Copper	0.11 mg
Iron	0.64 mg
Magnesium	14.93 mg
Manganese	0.58 mg
Phosphorus	48.13 mg
Potassium	245.33 mg
Strontium	39 mg

Zinc

0.90 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Climbing plant with funnel-shaped flowers in bright shades of yellow, orange, pink, red, or brown; growing within masses of round and scalloped leaves. Seeds are oval and somewhat ribbed.

TIME OF YEAR Spring, summer

RANGE Naturalized in some areas

ENVIRONMENT Likes rich soil, but can grow in sandy areas with irrigation. Tolerates neglect and not picky about soil, light, or water.

METHOD OF PREPARATION Leaves, stems, flowers, seedpods raw; seeds roasted or pickled

Green Deane's Notes

You can steal a snack out of a nasturtium flower bed as long as you know two things: that no pesticides were used on the flowers, and that the plant is peppery. The name nasturtium is a contraction of Latin words that mean “twisting nose”—how you may react to the peppery taste.

Besides eating them right off the plant, you can put nasturtium leaves (including stems), flowers, and immature seedpods in salads. Mature seeds can be roasted for eating or grinding to use like black pepper. Or pickle them and use like capers. I lacto-ferment the seeds for three days, drain them, add a little sugar and chardonnay to cover, and put them in the fridge for three days. Very tasty, but they smell horrible while fermenting.

Rich in vitamin C, the nasturtium is also packed with carotenoids and anthocyanins—the pigments that give the flowers their vibrant color—as well as phenolic compounds. All three types of substances can have antioxidant benefits. Interestingly, the flowers have a much higher protein

content than the seeds, 26.7% versus just under 2%; they also offer more than twice as much roughage.

If you plant nasturtiums, you'll have a natural indicator of your soil's quality: Rich soil produces a lot of leaves; poor soil, many blossoms. Nasturtiums are easy to grow and add a rainbow of colors to flower beds, trellises, etc. Planted around a vegetable garden, they can lure aphids away from the veggies.

Natal Plum

Carissa macrocarpa

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, potassium, calcium, phosphorus

SAFETY NOTES Only the totally ripe fruit is edible, raw or cooked; the rest of the plant is very toxic; also, watch out for its spines!

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Heavily branched evergreen, dense and rounded, with sharp spines. Opposite leaves up to 3 inches long, dark green, glossy look, leathery texture. Flowers snowy white, starshaped, 2 inches in diameter, five petals, in dense sprays, very aromatic. broken stem produces milky sap. Fruit resembles a skinny, pointed plum, pinkish-red when ripe, each containing 6–16 seeds the size of oatmeal flakes.

TIME OF YEAR Can bloom and fruit all year; heaviest fruiting in spring and summer

RANGE Native to Africa; a common coastal plant in warm areas

ENVIRONMENT Tolerates salty soil and winds, heat, drought, some shade. Likes full sun but can tolerate

METHOD OF PREPARATION Ripe fruit raw or cooked

Nutrition Notes

Per 100 grams

259 calories, 5 g fat, 50 g carbohydrates, 2 g protein, fiber NA

Vitamin A	40 IU
Vitamin B1 (thiamine)	0.04 mg
Vitamin B2 (riboflavin)	0.06 mg
Vitamin B3 (niacin)	0.2 mg
Vitamin C	38 mg
Calcium	11 mg
Copper	0.21 mg
Iron	1.31 mg
Magnesium	16 mg
Phosphorus	7 mg
Potassium	260 mg
Sodium	3 mg

Green Deane's Notes

Few foraged fruits can match the Natal plum in sheer deliciousness. But it's a member of one of the most deadly plant families, dogbane or Apocynaceae, and its cousin the oleander makes headlines for fatally poisoning the unknowing and the suicidal. Don't worry, the oleander doesn't resemble the Natal plum much.

Carissa macrocarpa is called the Natal plum because it is native to the Natal area of South Africa. In Afrikaans, it's known as the noem-noem.

All parts of the Natal plum are poisonous except for its ripe fruit, which is red and slightly soft to the touch. The fruit can be eaten off the bush (no peeling necessary) or made into pie, jam, jelly, or sauce. It tastes like a slightly sweet cranberry—some say like a not-quite-ripe cherry—with the texture of a ripe strawberry. Halved or quartered and seeded, Natal plums are suitable for a fruit salad, ice-cream topping, or garnish on cake or pudding. Some references say the seeds are toxic, but I eat the plums seeds and all and seem no worse for it. Do not, however, cook the fruit in an aluminum pot: Stewing or boiling causes it to shed flakes of (edible) latex that adheres to aluminum.

The Rare Fruit Council International has long tried to make the Natal plum more commercially available. It's a good source of vitamin C and of monounsaturated essential fatty acids. Why hasn't someone concocted a commercial fruit juice containing Natal plum? It could also include orange juice and be called Natal Navel ... lots of marketing possibilities there.

New Jersey Tea

Ceanothus americanus

NOTABLE NUTRIENTS OR USES Calcium, potassium, magnesium, chloride, phosphorus

SAFETY NOTES Avoid if pregnant and or breastfeeding; berries inedible

NATIVE STATUS Native



IDENTIFICATION Perennial shrub to a yard tall, many branches, loses leaves in winter. Leaves oblong, twice as long as wide, tapering to a blunt tip at base, three prominent veins from stem end to tip. Stems light green with fine covering of white hairs; twigs reddish brown. Racemose white flowers, pleasantly fragrant, maturing from the bottom up; each flower has a long, slender tube terminating in five hatchet- or dipper-shaped petals. Berries are inedible.

TIME OF YEAR Blossoms in early summer, which is also the best time to pick leaves

RANGE Eastern half of North America

ENVIRONMENT Plains, meadows, woodlands, riverbanks, lakeshores, hillsides, old fields, glades. Sandy or rocky but not wet soil.

METHOD OF PREPARATION Leaves for tea

Nutrition Notes

Leaves, per 100 grams

0 calories, 1 g fat, g carbohydrates, 1.7 g protein, 2.6 g fiber

Calcium	254 mg
Chloride	40.4 mg
Copper	0.2 mg
Iron	3.8 mg
Magnesium	50 mg
Manganese	5.8 mg
Phosphorus	14 mg
Potassium	95 mg
Sodium	1.8 mg
Zinc	0.4 mg

Green Deane's Notes

Ceanothus americanus, or redroot, was one of the local sources for tea that colonists relied on when they no longer had tea from India (by way of

England) following the Boston Tea Party. It became known as New Jersey tea because it was abundant there. Other common names are wild snowball, Mountain Sweet, and wild lilac.

While the colonists made tea with the plant, the Natives had many medicinal applications for it. Recent research showed the roots (which *are* red) contain a blood-clotting agent. Other *Ceanothus* species include *C. cuneatus*, *C. fendleri*, *C. ferrisiae*, *C. integerrimus*, *C. ovatus*, *C. sanguineus*, and *C. velutinus*. The genus is in the buckthorn family.

Gather New Jersey tea leaves when the plant is in full bloom. Crush them slightly, then dry them thoroughly indoors or in shade. Use one teaspoon of dried leaves per cup of boiling water in making tea. The taste is similar to bohea, a black tea. New Jersey tea does not have caffeine.

Norfolk Pine

Araucaria excelsa

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES See preparation notes below.

NATIVE STATUS Native to Norfolk Island, New Zealand, and the South Pacific.



Green Deane's Itemized Plant Profile

IDENTIFICATION Tall 80-foot tree with grayish-brown, smooth bark; long, narrow, tapering leaves that curve inward; and prickly, round cones. Mature cones drop and leave behind seeds about an inch long.

TIME OF YEAR Cones drop in summer.

RANGE Pacific islands; now a common landscape tree in Florida

ENVIRONMENT Sun, humidity, preferably rich soil; drought tolerant

METHOD OF PREPARATION Seeds raw or cooked

Green Deane's Notes

I often wonder what people were thinking when they planted a Norfolk Pine in their yard. They are messy trees, dropping a lot of leaves, and they just don't fit in with modern landscaping. The Norfolk in their name refers to Norfolk Island, an Australian Island, where they are native. The species is sometimes called the New Caledonia Pine, after the South Pacific island territory where it is also native.

Closely related to the bunya bunya and the monkey puzzle tree, the Norfolk Pine can grow taller than 260 feet (though 60 to 80 feet is more typical). One theory holds that the longnecked dinosaurs evolved to browse on Norfolk Pines—those sauropods would have gotten a lot of energy from the leaves. The trees were once used for masts for large ships, but they proved to be too fragile.

Female cones, which are always high up in the Norfolk Pine tree, each have between 75 and 200 starchy seeds, which are edible when the cones fall to the ground in fall; cones that fall to the ground before that are too immature to eat. You can eat them raw or cook them. Cones dropped in the fall taste better than those dropped in summer.

Opuntia and Nopal

Opuntia spp.

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, calcium

SAFETY NOTES Be brave when you collect cactus. Of course, good gloves and tongs help; to remove spines, use duct tape or Elmer's glue. See below for specific harvesting tips. Plants in the genus are hosts for cochineals, parasitic bugs that live in what looks like a layer of cottony spittle on the cacti (a red dye is derived from female cochineals). Do not eat any plant that resembles a cactus but has white sap; that would be a *Euphorbia*, which is highly toxic.

NATIVE STATUS Native to 46 states

Green Deane's Itemized Plant Profile

IDENTIFICATION Cactus to 14 feet tall with flat, rounded pads—actually, jointed stems—typically covered with brittle needle-like spines or tiny, sticky glochids (tufts of short prickles, resembling hairs, growing from an areole, or center bump). *Opuntia* flowers are yellow or pink and resemble roses; *nopal* flowers are pink and shaped like a shrimp. Fruit is a large red-to-purple teardrop in shape.



Nutrition Notes: *O. compressa*

Fruit, per 100 grams

42 calories, 0.1 g fat, 10.9 g carbohydrates, 0.5 g protein, 1.6 g fiber

Vitamin A	6 RE
Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.03 mg
Vitamin B3 (niacin)	0.4 mg
Vitamin C	22 mg
Calcium	56 mg
Iron	0.3 mg
Magnesium	85 mg
Phosphorus	28 mg
Potassium	220 mg
Sodium	2 mg

Nutrition Notes

Nopal pads, per cup

13.8 calories, 0.08 g fat, 2.86 g carbohydrates, 1.14 g protein, 1.89 g fiber

Vitamin C	8 mg
Vitamin K	4.56 mcg
Calcium	141 mg
Beta-carotene	19.8 mcg

TIME OF YEAR Blossoms spring, summer, or year-round depending on climate; pads edible anytime, fruit in season

RANGE Nationwide

ENVIRONMENT Dry, sunny spots

METHOD OF PREPARATION Fruit raw, juiced, or jellied; pads raw; the best thing to do is spray fruits and pads with water to reduce the amount of glochids. Wear heavy leather gloves when picking the fruit, then wash the fruit again and or burn what spines there might still remain off—a butane torch works well, as does a candle flame, or a deftly held propane torch. You then peel them to reach the soft red flesh inside, which can be eaten raw or cooked and has a raspberry-like flavor. Just be sure to take the seeds out. They are very hard and can break your teeth.

Green Deane's Notes

Both opuntia and nopal cacti have edible fruit, which are called tunas or, more familiarly, prickly pears. My foraging experience has taught me to look for nopals more than opuntias, if only because they have fewer spines or glochids—some nopals don't have them at all. Glochids are a major nuisance because they will stick to you instantly. Use duct tape to get them off.

Spines are actually a cactus's leaves, while its stems are what we call pads (that's what *nopales* means in an Aztec language). The pads are edible, and the best ones to eat are shiny and not too thick. In my foraging classes we usually eat a pad right off the plant after I remove the spines or cut off the glochids. Nopal pads tend to be larger than opuntia pads, so you get more food for the work. Chop them up and you've got nopalitos. Pads become fibrous, then woody, as they age, so older pads are usually peeled before they're consumed. The flesh inside pads can be sour.

I also eat cactus blossoms right off the plant, although there could be an angry bee inside an opuntia flower. As for those prickly pears, their red flesh has a flavor similar to raspberries. The fruit can be juiced for a drink or jellied. Its pectin content ranges from 5% to 15%, which is helpful if making jelly but a problem for making wine—pectin creates a haze in wine. Opuntia/nopal fruit is high in betalain, the pigment that also colors beets. The hard seeds of the fruit must be ground or roasted before eating. And which states do not have cactus naturally? The four farthest away from Central America: Maine, New Hampshire, Vermont and Hawaii. (Yes, there are cactus native to Alaska.)

Research has shown that eating cactus may lower your blood sugar levels and cholesterol levels, by decreasing the absorption of sugar and cholesterol in the stomach and intestine. That says to me, if society falls apart and there are no medications, one might eat cactus to moderate blood sugar.

The opuntia was introduced to Australia in 1788, becoming a nightmare that was soon nicknamed “the prickly green hell.” It quickly took over a million acres of prime agricultural land and was reluctantly used as a food source. A board was created in 1919 to eradicate the species, which largely succeeded by introducing a moth whose larvae feeds on the plant. It is now found in isolated pockets in Australia.

Oregon Grape

Mahonia spp.

NOTABLE NUTRIENTS OR USES Vitamin C, potassium, calcium, phosphorus

SAFETY NOTES See preparation tips below

NATIVE STATUS Native



Nutrition Notes	
Per 100 grams	
calories NA, fat NA, carbohydrates NA, protein NA, fiber NA	
Vitamin C	79.45 mg
Copper	0.09 mg
Iron	1 mg
Manganese	0.69 mg
Zinc	0.28 mg

Green Deane’s Itemized Plant Profile

IDENTIFICATION *Mahonia aquifolium*, shrub to 6 feet with glossy, leathery, toothed leaves that turn red in fall. Flowers bright yellow, bell-shaped, in

terminal clusters. Fruit small, round, blue berries with a grayish bloom.

TIME OF YEAR After a freeze

RANGE Most states except Alaska, Hawaii, those in New England, and some in the South

ENVIRONMENT Sun and lightly alkaline soil, can also stand clay, sand, acidic soil and loam

METHOD OF PREPARATION Eaten raw or used like many berries, in jam, baked goods, wine, etc.

Green Deane's Notes

Mahonia aquifolium, one type of Oregon grape also known as the holly-leaved barberry, has proliferated because it's one tough shrub. It can grow in bad soil and endure a drought, takes high-traffic abuse, is cold-hardy, and resists chemical pollutants. *M. aquifolium* berries have been used in pie, jelly, jam, and confections or eaten raw. A jelly made with half mahonia juice and half apple juice is popular. Fermented, Oregon grapes make a good wine. *M. aquifolium*'s yellow flowers also can be eaten or used to make a lemonade-like beverage. Its seeds are edible but bitter from berberine, an alkaloid that can have medicinal uses.

Berries from the *Mahonia bealei*, the Leatherleaf Mahonia or Beale's Barberry, can be used in many of the same ways as *M. aquifolium*'s. The spiny, gangly *M. bealei* shrub produces dense clusters of fragrant golden flowers and is a common ornamental in the South. The berries of several mahonias are edible in various ways, including the aforementioned *M. aquifolium*, *M. bealei*, *M. haematocarpa*'s, *M. nervosa*'s, *M. repens*'s, *M. swaseyi*'s, and *M. trifoliolata*'s.

A member of the barberry family, the genus *Mahonia* encompasses about 70 other species. *M. haematocarpa* (Red or Mexican Barberry) has

bloodred berries used to make jelly. Fruit from *M. repens* (Creeping Barberry) can be consumed raw, roasted, pickled, or in jam, jelly, wine, and a nonintoxicating beverage. *M. trifoliolata* (Agarito, Algerita, or Laredo Mahonia) produces red berries with a subtle tart taste. Eat them raw or make jelly, preserves, sauce, drinks, cakes, or tarts with them.

M. nervosa's ripe fruit is too acidic to eat raw but may be stewed with sugar or other fruits or used with milder-tasting fruits in jelly, drinks, or pies. The same goes for the Texas Barberry, *M. swaseyi*, whose yellow berries also can be dried like raisins. Its roasted seeds are a coffee substitute. Young leaves from *M. nervosa* (also called the Cascade Barberry) are simmered in water and eaten as a snack.

Mahonias are named for the early-American horticulturist Bernard McMahon, who was known as Thomas Jefferson's "garden mentor" and became one of the curators of plants collected by the Lewis and Clark expedition. It is said the 1804–1806 expedition, authorized by President Jefferson, was planned in McMahon's home. In 1806, McMahon published *The American Gardener's Calendar*.

Osage Orange

Maclura pomifera

NOTABLE NUTRIENTS OR USES Vitamin E, potassium, phosphorus, magnesium, lithium

SAFETY NOTES See below.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Tree to 40 feet high and 20 inches in diameter, often with a short, thick trunk and numerous low branches. Bark gray or yellow-brown, thick, divided into narrow forking ridges; sap thick, white, sticky. Leaves alternate, ovate, 2–5 inches long, 1–3 inches wide, usually with hard sharp spines at leaf base. Fruit large yellow-green knobby balls as big as 5 inches in diameter, smelling faintly of orange when ripe, with a ring of oblong seeds inside.

Nutrition Notes

Seeds, per 100 grams	
calories NA, fat NA, carbohydrates NA, protein NA, fiber NA	
Vitamin E	18.92 mg
Calcium	80.78 mg
Copper	6.8 mg (per kg)
Iron	60 mg
Magnesium	62 mg
Phosphorus	580.6 mg
Potassium	155.5 mg
Sodium	98 mg
Zinc	0.25 mg

TIME OF YEAR Fruit in late summer or fall

RANGE 39 states; doesn't grow in the coldest or driest regions, such as the High Plains and upper New England

ENVIRONMENT Bottomlands that are often inundated with water, have a mix of hardwoods, and are interspersed with prairie. Also places that are moderately dry.

METHOD OF PREPARATION Preferably roasted (seeds)

Green Deane's Notes

The Osage orange is in the mulberry family and closely related to the paper mulberry (*Broussonetia papyrifera*), which has an edible fruit—like many mulberries—but for a long time most horticulture-related websites said the fruit and seeds of an Osage orange are not edible. This misinformation may have begun when Osage oranges killed some livestock. Careful investigations determined the animals did not get sick from eating them, but rather, they usually suffocated on the large, lumpy fruit, which are also called hedge apples. One livestock feeding study found no significant chemical problems with Osage oranges, and squirrels seem particularly fond of ripping into them. Birds and small mammals enjoy the seeds.

The seeds are the only edible part of an Osage orange, and they taste somewhat like sunflower seeds. It does take a lot of work to get the seeds. You can soak ripe fruit in a bucket of water to soften it and make it easier to separate out the seeds. This will be an aroma-filled process and not pleasant. Let's just say being really hungry would help. You can eat the seeds raw, but they are better roasted.

While the edibility of the Osage orange has been maligned for decades, its usefulness has not. When archaeologists were searching for old homesteads in the Midwest to excavate, they discovered that Osage orange trees were more indicative of a former homestead nearby than old wells. That says something about how much people may have depended on the tree in the past.

The Osage orange was and still is esteemed for making bows—some bow manufacturers think its wood is superior to that of the yew, which is usually held up as the standard. Osage orange's wood also is used to make guitars and various other products. The bark provides a yellow dye and tannins. A chemical from the tree, pomiferin, shows promising activity against certain cancerous brain tumors. It inhibits cell viability.

Oxalis

Oxalis spp.

NOTABLE NUTRIENTS OR USES Vitamin C

SAFETY NOTES Contains oxalic acid, which can contribute to kidney stones in some people

NATIVE STATUS Introduced and/or native



Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial up to 6 inches tall, often growing in colonies. Triangular, round, heart- or lance-shaped leaves; each plant has only three leaves distributed around the stem, and each leaf has a short stem of its own. Flowers are small and have five pink or yellow petals.

TIME OF YEAR Grows and flowers July to September in northern climes, year-round in warm areas, where it's very prolific in January, February, and March

RANGE Native to North America and Europe

ENVIRONMENT Anywhere moist but well-drained, such as lawns, woods, trails, parks

METHOD OF PREPARATION Leaves and stems as ingredients in salad, soup, stuffing, or beverage

Nutrition Notes: *O. corniculata*

Per 100 grams, dried leaves

49 calories, 0.8 g fat, 8.2 g carbohydrates, 2.3 g protein, 0.9 g fiber

Vitamin B3 (niacin)	0.6 mg
Vitamin C	78 mg
Calcium	2.5 mg
Magnesium	0.25 mg
Potassium	2.17 mg
Sodium	1.12 mg

Green Deane's Notes

The first plant I learned to eat from other kids was an oxalis. They called it sour grass, but it looked more like clover than grass.

The oxalis family is huge, with hundreds of different species, among them *O. corniculata* (formerly, *O. stricta*), *O. tuberosa*, and *O. violacea*. They are also called wood sorrels and are about as widespread as mustards.

All oxalises seem to be edible blossom to root. You can put the leaves and stems in salads and soups or ferment them like sauerkraut. They are refreshing to nibble on raw, or stuff them in that trout you just caught and are cooking over a campfire. If you cook oxalis, use a glass or ceramic pot. The stems and leaves also can be made into a tangy drink: Leaves can be mashed or blended. The French crush them, add vermouth, and use as a sauce on white fish. Oxalis's root bulb is succulent and can be sweet—it can be cooked or eaten as is.

Aboveground parts of the oxalis taste much like rhubarb, but not as tart. The oxalis is mildly tart because it contains oxalic acid. People with kidney

stones, gout, or related conditions should be careful about consuming oxalic acid, although many mainstream foods—spinach, chard, beets, chocolate, black pepper, nuts, berries, beans, tea, parsley—have it and you don’t usually read or hear any warnings about them. The French are not succumbing from slurping sorrel soup. As my Greek ancestors used to say, “All things in moderation” ... though the phrase more literally translated to “Don’t live in extremes.”

Among folks who don’t know enough to eat oxalis, you have another viewpoint: It’s a pernicious, ugly weed that uses up your water, fertilizer, and garden space. Once an oxalis gets a roothold in a garden, it’s there forever. But it seems gardeners who complain the most about “weeds” are also the last ones to consider eating them. It’s like they are for controlled green but not natural green. To me, an oxalis in my garden is food I didn’t have to plant, meaning little work or expense involved.

Pacific Crab Apple

Malus fusca

NOTABLE NUTRIENTS OR USES No nutritional information available; carbohydrates, fiber, potassium, phosphorus, calcium

SAFETY NOTES Like most apples, the seeds contain some cyanide.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Small tree with deeply fissured older bark and branches that have sharp shoots. Leaves irregularly lobed, toothed, pointed at tip. Flowers white or pink, fragrant. Fruit small, oblong, yellow to orange to purplish red.

TIME OF YEAR Late fall to after first frost

RANGE Oregon, Washington, Alaska, Northern California

ENVIRONMENT Moist woods, edges of wetlands, estuaries. Prefers full sun

METHOD OF PREPARATION Raw, cooked, in jelly/preserves



Nutrition Notes

Raw, Per 100 grams

76 calories, 0.3 g fat, 20 g carbohydrates

Vitamin A	4 RE
Vitamin B1 (thiamine)	0.3 mg
Vitamin B2 (riboflavin)	0.2 mg
Vitamin B3 (niacin)	0.1 mg
Vitamin C	8 mg
Calcium	18 mg
Copper	0.1 mg
Magnesium	7 mg
Phosphorus	15 mg
Potassium	194 mg
Sodium	1 mg

Green Deane's Notes

This is the only crab apple on the West Coast from about San Francisco north. It's a wild apple that manages to survive in Alaska.

Pacific, or Oregon, Crab Apples are often picked when slightly underripe, to sweeten off the tree. On the tree they become sweeter after a frost, which also turns them brown and soft. You can eat them fresh, cooked, and

preserved. Since they have plenty of pectin, they're good for making jelly—preferably combined with sweeter fruits. Their acid content also helps in preserving them.

Pacific Silverweed

Argentina egedii

NOTABLE NUTRIENTS OR USES Carbohydrates, fiber, phosphorus, sodium, magnesium

SAFETY NOTES See preparation notes below.

NATIVE STATUS Native



Nutrition Notes

Roots, steamed, per 100 grams

132 calories, 0.6 g fat, 29.5 g carbohydrates, 3.1 g protein, 9.5 g fiber

Vitamin A	0.2 RE
Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.01 mg

Vitamin B3 (niacin)	2.4 mg
Calcium	37 mg
Copper	1.1 mg
Iron	3.5 mg
Magnesium	60 mg
Manganese	0.8 mg
Phosphorus	109 mg
Sodium	65 mg
Zinc	1.1 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Low-growing perennial that spreads by creeping stolons—stems that grow horizontal near the ground. Leaves alternate, pinnately compound, glossy green with silver undersides. Flowers yellow, five-petaled, five-sepaled (might remind one of buttercups).

TIME OF YEAR Fall

RANGE California, Oregon, Washington, Alaska, New York, New England

ENVIRONMENT Beaches, dunes, sand flats, estuaries, high tidal marshes

METHOD OF PREPARATION Roots boiled, roasted, dried

Green Deane's Notes

Pacific Silverweed gets around, mostly at the top of the world—places like Siberia, the Yukon, Greenland, and northern US states on both the East and West Coasts. It has a bunch of other common and scientific names, among them silverweed, Greenland Silverweed, Eged's Silverweed, *Potentilla pacifica*, *P. anserina* ssp. *pacifica*, and *Argentina egedii* ssp. *groenlandica*. Whatever it is called, many Native tribes were eating it a long time ago, proving botanists' work isn't always necessary.

One of the problems with the plant is it grows like crazy. But if you're hungry, that's great. The roots are the edible parts. They have to be boiled

or roasted to reduce their bitterness. If you want to store some for a while, they can be dried before or after cooking.

At least 12 Native groups in North America considered Pacific Silverweed a staple. They also cooked and ate the roots of *Argentina anserina* (Silverweed Cinquefoil), a smaller plant found in wet inland places throughout most of North America except the Southeast.

Panic Grass

Panicum maximum

NOTABLE NUTRIENTS OR USES Carbohydrates, magnesium, phosphorus, calcium, sodium

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced

Green Deane's Itemized Plant Profile

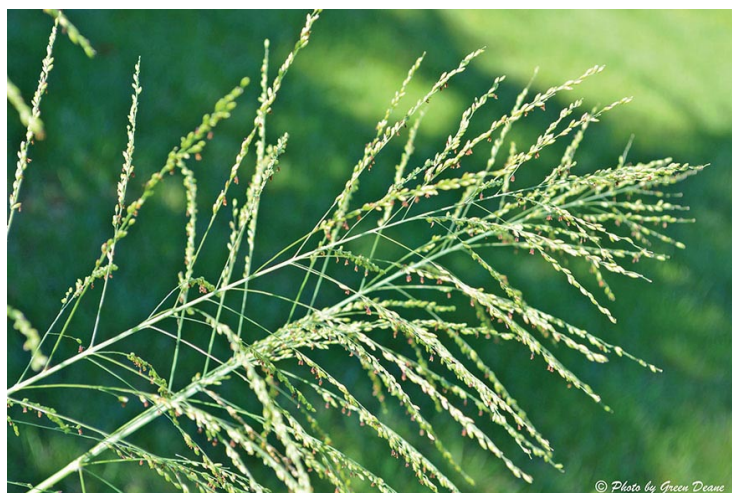
IDENTIFICATION Perennial grass up to 7 feet high, usually in large stands, with short, creeping rhizomes and blades up to 1.5 inches wide, each tapering to a long fine point. Leaf sheaths at bases of stems are covered in fine hairs. Inflorescence is a large, open panicle with loose, flexible branches; lower branches in a whorl; spikelets green or light purple; seeds tan.

TIME OF YEAR Flowers from November to July, seeds in fall

RANGE Native to subtropical Africa, the Arab Peninsula, and Indian Ocean islands; found today in most US States

ENVIRONMENT Prefers fertile soil, adapted to a wide variety of conditions. Grows well in shade, damp area, under trees, seen along rivers and open woodland

METHOD OF PREPARATION Raw or parched



Nutrition Notes: *Panicum miliaceum*

Per 100 grams

2.7 g fat, 60.9 g carbohydrates, 9.7 g protein, 4.6 g fiber

Vitamin B1 (thiamine)	0.73 mg
Vitamin B2 (riboflavin)	0.38 mg
Vitamin B3 (niacin)	0.38 mg
Calcium	25 mg
Copper	1.6 mg
Iron	5.5 mg
Magnesium	169 mg
Manganese	1.8 mg
Phosphorus	163 mg
Potassium	3.5 mg
Sodium	18 mg
Zinc	4.9 mg

Green Deane's Notes

I eat grass. Most of us do—rice, wheat, oats, barley are all in the grass family—but a regular trailside nibble of mine is panic grass, aka guinea grass, a close relative of millet. I'd like to tell you I collect enough to bake a loaf of bread, but I never have. It's an extremely common small-seed grass, though.

On the trail, I strip a stalk and just chow down on raw seeds, as long as they are not red, purple, black, or brown with fuzz. Such colors indicate they have a fungal infection and are potentially dangerous. Or I gather a few cups of the seeds and parch them—toast them under dry heat—until lightly green or brown—to eat as a snack. (I don't winnow them.) They have a slightly burnt peanut flavor, which I find quite nice.

Panicum maximum has been reclassified as *Megathyrsus maximum*, after a long time in the *Panicum* genus. Its relatives, including *Panicum miliaceum* (proso or Common Millet), provide a lot of food around the world. Millet may not be a leading grain in the United States, but it is important nearly everywhere else.

Papaya

Carica papaya

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin E, beta-carotene, B vitamins

SAFETY NOTES See preparation notes below.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Large, single-stemmed herbaceous plant, up to 30 feet high, trunk to a foot thick with prominent leaf scars. Leaves as big as 2.5 feet wide, palmate, stems 1–3 feet long. Flowers waxy, ivory white. Fruit oval or round, weighing up to 20 pounds, yellow-orange skin, central seed cavity with round black seeds, flesh salmon-colored at maturity.

TIME OF YEAR All year in tropical climes, late summer through winter (if no frost) in more temperate areas

RANGE Central and South America; cultivated in warm areas worldwide; common in Florida, California, and Hawaii

Nutrition Notes

Leaves, per 100 grams

2.01 g fat, 29.2 g carbohydrates, 6.5 g protein, 3.1 g fiber

Vitamin B1 (thiamine)	199.31 mg
Vitamin B2 (riboflavin)	295.63 mg
Vitamin C	68.59 mg
Vitamin E	39.78 mg
Calcium	1086.53 mg
Chromium	31.1 mg
Phosphorus	1971.17 mg
Potassium	80.13 mg
Beta-carotene	303.55 mg

Nutrition Notes

Fruit, per 100 grams

43 calories, 0.26 g fat, 10.82 g carbohydrates, 0.47 g protein, 1.7 g fiber

Vitamin A	950 IU
Vitamin B1 (thiamine)	0.02 mg
Vitamin B2 (riboflavin)	0.03 mg
Vitamin B3 (niacin)	0.36 mg
Vitamin B6 (pyridoxine)	0.04 mg
Vitamin B9 (folic acid)	37 mcg
Vitamin C	60.9 mg
Vitamin E	0.3 mg
Calcium	20 mg
Copper	0.05 mg
Iron	0.25 mg
Magnesium	21 mg
Manganese	0.04 mg
Phosphorus	10 mg
Potassium	182 mg
Selenium	0.6 mcg
Sodium	0.8 mg
Zinc	0.08 mg
Beta-carotene	0.27 mg
Choline	6.1 mg

Lycopene

1.83 mg

ENVIRONMENT An opportunist, it likes good soil, water, and sun but can grow in trash heaps, old homesteads, and margins.

METHOD OF PREPARATION Fruit and pith raw; leaves, seeds, flowers, roots boiled

Green Deane's Notes

The papaya is native to Central America and spread around the world with Spanish exploration beginning in the 1500s. It is related to the Maypop. It has experienced significant changes in growth habit, fruit size, and flesh color under human cultivation. I grew one for about eight years but had a constant problem with papaya flies ruining the fruit.

Botanists and other interested parties debate whether the papaya is a tree or an herb. It seems to meet the expectations of both, so they split the difference and call it a giant herbaceous plant. The large, bulbous fruit of a papaya is a berry. Yep, a berry. It can be eaten raw when ripe or cooked when green.

But the papaya is more than just its fruit. Its leaves, flowers, seeds, roots, and even pith are also edible. Boil young leaves and flowers to eat. The peppery seeds can be consumed raw but are often bitter and could upset your stomach. Cooking them helps reduce bitterness—or dry them to grind and use like pepper. The pith, the soft inside of the main trunk, is edible raw. Roots of a papaya are edible if boiled a long time.

Nutritionally, the papaya offers a range of vitamins and minerals, as well as a heavy dose of flavonoids, pigments with antioxidant power. Among nonfood uses, you can substitute older papaya leaves for washcloths because they're big enough and they contain saponins, foamy compounds used in making soap.

Paperbark Tea Tree

Melaleuca quinquenervia

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES A significant allergen and cause of dermatitis

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen tree to about 80 feet tall, whitish bark spongy, peeling, multilayered. Leaves alternate, simple, narrowly elliptic, to 5 inches long, flat, leathery, short-stalked, veins more or less parallel. Leaves smell of camphor when crushed. Flowers white, small, crowded in bottlebrush-shaped spikes at branch tips. Fruit short, cylindric or squarish, woody capsules with many tiny seeds.

TIME OF YEAR Leaves year-round, blossoms typically in fall

RANGE Florida, Louisiana, Texas, California, Hawaii

ENVIRONMENT Prefers seasonally wet areas, standing water, or well-drained uplands; can tolerate freezes once established and usually survives forest fires

METHOD OF PREPARATION Blossoms soaked in hot liquid to make flavoring, leaves for (medicinal) tea

Green Deane's Notes

The first use of *Melaleuca* leaves by non-Australians is believed to be when sailors on Captain Cook's *Endeavour* ran out of regular tea in 1770. Later that decade, British petty criminals forced to call Australia home had to use *M. alternifolia* leaves if they wanted tea.

You can make a better tea if you include the blossoms. Soak them in hot water to release their nectar and use it to sweeten tea made from the leaves. The tea is good when you have a cold, as oil in the leaves has antimicrobial action.

The leaf oil, called cajeput, has many medicinal applications. While some sources say it can treat high blood pressure, herpes, and bacterial infection, research is iffy on those. But a 2015 study asserted that tea tree oil has antimicrobial, analgesic, anti-inflammatory, and insect-repellent properties.

The USDA calls *M. quinquenervia* the punk tree, one of its common names. Its bark can serve as tinder or cork; larger pieces could be used to bake food in or line ground ovens. It also is useful for lining baskets and other containers, as it wicks water. The wood is durable in water and thus is valued for boats and wharves, as well as cabinetry, flooring, carving, crossties, fence rails, pilings, and rafters.

Melaleuca is closely related to *Callistemon*, or the Bottlebrush Tree, a common ornamental. The main difference between them is that the male part of the flower, the stamen, is generally free on *Callistemon* but bundled

on *Melaleuca*. The blossoms, seeds, leaves, and scent tell you they are related.

Paper Mulberry

Broussonetia papyrifera

NOTABLE NUTRIENTS OR USES Calcium, potassium, phosphorus, magnesium, vitamin E

SAFETY NOTES Fruit has trace amounts of arsenic

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Fast-growing deciduous tree to 45 feet tall with milky sap and tan, smooth, horizontally striped or furrowed bark. Twigs hairy, reddish brown, wood soft and brittle. Leaves lobed like a mitten; toothed along edge; base rounded, tips pointed; hairy; alternate, opposite or whorled along stem; upper surface rough-feeling. Female flowers globular, about 1 inch in diameter; male flower clusters elongate, pendulous, 2.5–3 inches. Fruit round, green, and pocked when immature; ball of orange to reddish purple tube-shaped parts arranged like a pom-pom.

TIME OF YEAR Summer in northern areas, February to April in South

RANGE Massachusetts south to Florida and west to Nebraska, Oklahoma, and Texas

ENVIRONMENT From sunny open fields to ditches and gullies

METHOD OF PREPARATION Fruit out of hand, young leaves cooked

Nutrition Notes

Fruit, per 100 grams

36.09% carbohydrates, 15.71% protein, 20.51% lipids

Vitamin B1 (thiamine)	0.32 mg
Vitamin B2 (riboflavin)	0.12 mg
Vitamin B5 (pantothenic acid)	1.85 mg
Vitamin B6 (pyridoxine)	1.21 mg
Vitamin C	0.1 mg
Vitamin E	7.29 mg
Calcium	1739 mg
Copper	1.9 mg
Iron	41.48 mg
Magnesium	328 mg
Manganese	4.45 mg
Phosphorus	464.2 mg
Potassium	909.8 mg
Zinc	2.8 mg

Green Deane's Notes

The paper mulberry is both weedy and practical. Its bark has been used for thousands of years to make paper, cloth, and rope. Its large leaves, soft on the underside, commonly serve as woodland toilet paper. Once grouped with other mulberries, its close relatives, the paper mulberry was moved from the *Morus* genus into its own, *Broussonetia*.

The leaves of a young paper mulberry look very different from those on an adult tree. They go from palmate and deeply indented to mitten-shaped, with one lobe that could be the thumb. The young leaves are edible, though

chewy, if steamed or chopped and boiled. Bigger leaves can be used to wrap food for cooking.

To call the fruit an orange pom-pom is quite accurate. It starts out as a green ball, about the size of a large marble, at the end of a 2-inch stem. It has a pitted surface, much like breadfruit, to which it is related. Then the ball grows white hairs, which eventually turn into tubular orange fruits that give the ball its pompom appearance. The ball is not edible, as far as I know. The little orange fruits are sweet and juicy—and fragile. They do not travel well and are best eaten on the spot.

Partridgeberry

Mitchella repens

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Low-growing, nonclimbing, evergreen vine often found under leaf litter in deciduous forests. Leaves opposite, oval or heart-shaped, half inch across, parallel-veined, yellow midrib. Flowers white or faintly pink, half inch long, four or five fuzzy petals. Fruit bright-red oval berry with two dimples, under half an inch in diameter.

TIME OF YEAR Berries ripen from July to October, and in many states are available for about 10 months of the year.

RANGE Eastern North America

ENVIRONMENT Moist woods, usually among trees that lose their leaves in winter

METHOD OF PREPARATION Trailside nibble, salad ingredient, in sauce, pie, and jam. Tea from leaves and berries

Green Deane's Notes

Partridgeberries have their supporters and their detractors. In their favor, they're as useful as cranberries. I find them juicy, if not messy, and very mild-tasting. In fact, they have nearly no flavor—which is why some consider them insipid.

By far the greater calling of the partridgeberry has been medicinal. A tea made from the leaves has a long history of being drunk to ease childbirth and menstrual cramps. That tea is also diuretic, which can lower blood pressure.

The plant contains flavonoids, including luteolin, quercetin, and kaempferol, as well as phenolic acids—both groups of compounds work as antioxidants. The partridgeberry also has tannin content as high as 21%.

One partridgeberry comes from two flowers, one with a short pistil and long stamens, the other a long pistil and short stamens. Maybe it should have been called the Mirrorberry. But it has the name it does because it's favored by the ruffed grouse, which is often confused with the partridge. *M. repens* belongs to the Rubia, or Madder, family, also known as the coffee family.

Passion Fruit

Passiflora edulis

NOTABLE NUTRIENTS OR USES Beta-carotene, potassium, phosphorus, vitamin C, magnesium

SAFETY NOTES *Passiflora caerulea* and *Passiflora foetida* have cyanide in their leaves, which are inedible for humans anyway.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Vine to 15 feet long, shallow-rooted, climbs by tendrils, with showy purple-and-white flowers that produce oval fruit, 1.5–3 inches in diameter, purple or yellow when ripe, with an interior cavity of membranous seeds surrounded by light-colored flesh

Nutrition Notes

Per 100 grams

97 calories Seeds: 23.4 g fat, 0.8 g protein, 17.48 g fiber

Vitamin B2 (riboflavin)

0.13 mg

Vitamin B3 (niacin)	1.5 mg
Vitamin C	30 mg
Vitamin E	0.02 mg
Vitamin K	0.7 mcg
Calcium	12 mg (seeds: 54 mg)
Copper	0.13 mg (seeds)
Iron	2 mg (seeds)
Magnesium	29 mg (seeds: 154 mg)
Phosphorus	68 mg (seeds: 125 mg)
Potassium	348 mg (seeds: 85 mg)
Selenium	0.6 mcg
Sodium	28 mg (seeds: 298 mg)
Zinc	0.55 mg (seeds)
Beta-carotene	743 mg
Choline	7.6 mg

TIME OF YEAR Fruiting from early summer into fall

RANGE Native to South America; now naturalized in the southern US, as well as Hawaii; also found in Asia, Australia, and elsewhere

ENVIRONMENT Thickets, disturbed ground, unkept pastures, roadsides, railroads, no damp areas. Likes full sun and water but good drainage

METHOD OF PREPARATION Sometimes when green the seeds inside are ripe enough to eat and are sweet and sour. With other passionflowers eat only the ripe fruit.

Green Deane's Notes

Passion fruit is the edible berry—botanically, it's a berry—from any of the 500-plus species of *Passiflora*, or passionflowers. *Passiflora edulis*, the sweetest of the lot, is one of the flavors in Hawaiian Punch. *Passiflora lutea*, which has a yellowish flower and small fruit that's purple/black when ripe, is edible but not too tasty (it's used to make ink). *P. suberosa*, with blue fruit, is also edible, as is *P. foetida*, which has tasty red fruit with very

thin skin. *P. edulis* also has the common name purple granadilla—the latter word another name for the fruit too.

The genus has “passion” in its name because when the flowering vine was first sighted by Spanish explorers in 1529, the complex shape of the blossom captured their imagination and they described it as a symbol for the Passion of Christ. Other *Passiflora* with edible fruit include *P. alata*, *P. ambigua*, *P. ampullacea*, *P. antioquiensis*, *P. caerulea*, *P. coccinea*, *P. cumbalensis*, *P. laurifolia*, *P. lingularis*, *P. maliformis*, *P. manicata*, *P. mixta*, *P. mollissima*, *P. organensis*, *P. pinnatistipula*, *P. platyloba*, *P. popenovii*, *P. quadrangularis*, *P. serrato-digitata*, *P. tripartita*, and *P. vitifolia*. Only *P. incarnata* (see maypop, [page 190](#)) has edible leaves.

Pawpaw

Asimina spp.

NOTABLE NUTRIENTS OR USES Vitamin C, potassium, magnesium, calcium, phosphorus

SAFETY NOTES Some people have a very severe allergic reaction to the fruit. It belongs to a family of fruit trees suspected of inducing Parkinson's disease. The offending compounds are thought to be acetogenins.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Shrub or small tree, often about 15 feet but ranges from 3 to 40 feet, evergreen in South, deciduous in northern areas. Leaves alternate, simple, ovate, smooth edges. Flowers white or purple or red-brown, single or in clusters, three large outer petals, three smaller inner petals, foul-smelling (can smell like rotting meat). Fruit potato-shaped, also similar in size, green when unripe, maturing to yellow or brown, many seeds

TIME OF YEAR End of summer, fall

RANGE most of the US, aside from the High Plains and the Rockies

ENVIRONMENT Rich bottomlands to rain-watered pastures, open areas, beside open areas, roadsides

METHOD OF PREPARATION Raw or cooked



Nutrition Notes

Per 100 grams

85 calories, 0.9 g fat, 18.8 g carbohydrates, 5.2 g protein, 2.6 g fiber

Vitamin A	87 mcg
Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.09 mg
Vitamin B3 (niacin)	1.1 mg
Vitamin C	18.3 mg
Calcium	63 mg
Iron	7 mg
Magnesium	113 mg
Manganese	2.6 mg
Phosphorus	47 mg
Potassium	345 mg
Zinc	0.9 mg

Green Deane's Notes

When I took my foraging class to a particular open spot and said we are now standing among five pawpaws, two students from West Virginia looked around, perplexed. Where they live, the pawpaw is a good-size tree. Where I live in Florida, it is usually a low shrub, or occasionally a small, spindly

tree. Florida's pawpaws are smaller than those growing elsewhere in the US—shrubs if not dwarfs.

In some places, people see pawpaws so often they don't notice them; in other areas, they are a rare find. Pawpaw fruit has not become a commercial crop. Woodland creatures usually get to pawpaws first, so you rarely see a ripe one. The fruit is edible straight from the tree, but palatability varies. Its flavor is similar to a combination of banana and mango. Don't eat the skin or seeds. There are two general types of pawpaws: One ripens early and is large with flavorful yellow flesh; the other is typically smaller, ripens later, and has white, milder flesh. You can also use the fruit in baked desserts.

Asimina species include *A. incana*, *A. longifolia*, *A. obovata*, *A. parviflora*, *A. pygmea*, *A. reticulata*, *A. tetramera*, and *A. triloba*. The pawpaw was under cultivation by Natives east of the Mississippi when de Soto traipsed through in 1541. Thomas Jefferson planted some pawpaws at Monticello. Chilled pawpaw fruit was a favorite dessert of George Washington.

Pawpaws are difficult to cultivate. They need a lot of pampering for a few years to get them started. After that, they tend to be free of problems and have only a few pests (which means they can be grown organically). One, uh, interesting aspect of the plant is that it is pollinated by carrion flies and insects attracted to fetid odors. Growers have been known to put roadkill or rotting meat in their groves to draw the pollinating flies. On a prettier note, pawpaws also attract a wide variety of butterflies.

The name pawpaw (or, less commonly, papaw) is a corruption of the American Indian word papaya. Natives used a powder made from dried pawpaw seeds to treat head lice; pharmaceutical preparations today still use them for that. The leaves are diuretic, and the bark yields a strong fiber for cordage.

Pecan

Carya illinoensis

NOTABLE NUTRIENTS OR USES Fat, protein, carbohydrates, fiber, potassium

SAFETY NOTES Toxic to dogs

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Tree 70–100 feet tall, gray trunk with shallow furrows, twigs gray-brown and hairy when young, rough and furrowed in maturity. Leaves narrow, pointed, curved at tip, toothy margins, yellow-green on top and paler below, nine to 17 leaflets per stem including terminal set of three. Flowers catkins with small green blossoms, nuts at ends of new growth. Nuts brown, cylindric, thin-shelled, enveloped in four-winged husk.



Nutrition Notes

Per 100 grams

691 calories, 71.97 g fat, 13.86 g carbohydrates, 9.17 g protein, 9.6 g fiber, 3.97 g sugar

Vitamin A	3 mcg RAE or 56 IU
Vitamin B1 (thiamine)	0.66 mg
Vitamin B2 (riboflavin)	0.13 mg
Vitamin B3 (niacin)	1.17 mg
Vitamin B5 (pantothenic acid)	0.86 mg
Vitamin B6 (pyridoxine)	0.21 mg
Vitamin B9 (folic acid)	22 mcg
Vitamin C	1.1 mg
Vitamin K	3.5 mcg
Calcium	70 mg
Copper	1.2 mg
Fluoride	10 mcg
Iron	2.53 mg
Magnesium	121 mg
Manganese	4.5 mg
Phosphorus	277 mg
Potassium	410 mg
Zinc	4.53 mg
Beta-carotene	29 mcg
Choline	40.5 mg

TIME OF YEAR Flowering from March to May, seedlings sprout around April, nuts mature September/October

RANGE Eastern half of US

ENVIRONMENT Well-drained loamy soil not subject to prolonged flooding. Very susceptible to fire and damages easily.

METHOD OF PREPARATION Nutmeat raw or in pie, candy, etc.

Green Deane's Notes

The pecan is the largest of the hickories, and the most user-friendly. Its nuts conveniently drop to the ground—no climbing required. When the nuts are ready for harvesting, their husks begin to crack and can be removed easily by hand. (Nuts that still have husks on them are probably not fully ripe.)

Drying pecans, which takes 2 to 10 days, starts the “curing” process and improves the flavor. You still, of course, have to shell the nuts, and that’s work regardless of type of nut.

Raising pecan seedlings is tough because a lot of creatures like to eat them. The nuts are eaten by various birds, squirrels, raccoons, foxes, and opossums. Deer may heavily browse older pecan trees. Pecan trees live long and start fruiting around 20 years old. About 100,000 tons of pecan nuts are produced annually in the US; the average tree produces roughly 100 pounds per year. Cool springs and summers reduce production.

The species’ scientific name is *illinoensis* because traders brought the nuts to the Atlantic Coast from Illinois. Thomas Jefferson planted them at Monticello around 1775 and gave some to George Washington. Those pecans are the oldest trees at Washington’s Mount Vernon estate.

Pellitory

Parietaria spp.

NOTABLE NUTRIENTS OR USES Calcium, sodium, potassium, magnesium, phosphorus

SAFETY NOTES Some people get an itchy flush when they eat it. See below.

NATIVE STATUS Native and/or introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION Grows in colonies, 6–14 inches high, usually unbranched, green four-angled central stem can be slightly hairy. Leaves alternate, lanceolate, no teeth. Flowers green, each surrounded by several green bracts longer than the flower, no petals, four stamens.

TIME OF YEAR Early winter in warm climates, early spring where cooler

RANGE Various *pellitory* species are found around the globe

ENVIRONMENT Cool, dry areas with light shade; walls, fences, edges

METHOD OF PREPARATION Leaves and stems raw or cooked



Nutrition Notes

Per 100 grams

155 calories, 0.6 g fat, 2.8 g carbohydrates, 5.4 g protein, 5.2 g fiber

Calcium	883 mg
Copper	0.4 mg
Iron	2.8 mg
Magnesium	200 mg
Manganese	0.9 mg
Phosphorus	80 mg
Potassium	463 mg
Sodium	585 mg
Zinc	1.2 mg

Green Deane's Notes

Besides being a salad ingredient and potherb for thousands of years, pellitory has been used herbally, mainly as a diuretic of significant strength that's good for kidney stones and bladder issues. Yet it is high in sodium, which tends to make some folks *retain* water.

Uncooked, pellitory has a hint of cucumber aroma—hence, it's sometimes called Cucumber Weed. Cooked, it is bland, but you can flavor it as you

like. I have friends who just stuff it raw into tacos with other fixings. I'd say chopped up in salads is the best way to go if eating pellitory raw. Its iron content is on par with that of spinach. Pellitory stems can be fibrous even when boiled, so cutting them into small pieces beforehand is recommended. The water pellitory is cooked in is considered by chefs to be excellent stock for making risotto.

While there is a difference between eating a plant and breathing its pollen, in the Mediterranean region pellitory—in particular *P. judaica*, aka *P. diffusa*—is becoming a significant allergy problem. Four out of five people who are allergic to pollen show an allergy to that particular *Parietaria*. Some Australian hospitals call *P. judaica* the “asthma weed” and label it dangerous. If you have allergies or hay fever, pellitory might be an edible plant to skip: It's known to make some people who eat it raw itch for a while.

Peppergrass

Lepidium spp.

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, iron, potassium, magnesium

SAFETY NOTES No known safety issues

NATIVE STATUS Native and/or introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Mustard-family plant with erect stem and long, lobed, deeply toothed leaves and vertical taproot. Produces a low rosette of deeply cut basal leaves, followed by vertical growth and seeding. Flowers whitish-yellow, tiny, on elongated racemes, four petals, two stamens. Seedpods shaped like small fish scales

TIME OF YEAR Springtime into summer

RANGE Native to much of North America, as well as Central America

ENVIRONMENT Well-drained soil, sandy to rich, in a sunny spot; old pastures, gardens, lawns, roadsides

METHOD OF PREPARATION Leaves raw or cooked, seeds ground for spice, roots made into horseradish substitute

Nutrition Notes: *L. sativum*

Per 100 grams

32 calories, 0.7 g fat, 5.5 g carbohydrates, 2.6 g protein

Vitamin A	930 RE
Vitamin B1 (thiamine)	0.05 mg
Vitamin B2 (riboflavin)	0.62 mg
Vitamin B3 (niacin)	2.54 mg
Vitamin C	69 mg
Calcium	81 mg
Iron	1.3 mg
Phosphorus	76 mg
Potassium	606 mg
Sodium	14 mg

Green Deane's Notes

There are two ways of thinking about peppergrass: either as a neat wild treat or an obnoxious weed. Regardless of your view, peppergrass is a survivor and has been part of humans' diet for millennia. As far back as 300 BC, Pliny was writing about *Lepidium*, and more than a thousand years before that, the Incas were cultivating it. The 175-odd species of *Lepidium* include *Lepidium virginicum* (Virginia Pepperweed, aka poor man's pepper); *L. sativum* (garden cress); and *L. campestre* (cow cress or Field Pepperweed).

The young leaves can be added to salads or soups; they are peppery and might remind you of wasabi. I like them as a trailside nibble. You could also blanch and then sauté the leaves. The seeds can be ground and used

like pepper. Roots are also edible, though they take a lot of work: Grind them up and mix with vinegar for a good substitute for horseradish.

If you're not inclined to eat peppergrass, its dried seed stems make an eye-catching addition to flower arrangements and wreaths. They are showy and sturdy. The plant also has medical use. *L. virginicum* roots can counteract certain parasites, a 2003 study found, supporting anecdotal reports of its effectiveness in controlling diarrhea.

Some years ago, the Virginia Agricultural Experiment Station at Blacksburg, Virginia, had a heavy stand of *Lepidium virginicum*. There was too much to let it all go to seed, but if left, it would smother out the alfalfa that was also growing there. Mowing, raking, and hauling it away would be costly. So they decided to use it for silage (cattle food)—a bold idea because plants in the mustard family can taint the flavor of milk. The 10 acres yielded approximately 28 tons of peppergrass. They mixed it with molasses as a preservative, then let it ferment. At the end of fermentation, there was no odor or flavor of peppergrass.

Perennial Peanut

Arachis glabrata

NOTABLE NUTRIENTS OR USES No nutritional information available; carotenoids

SAFETY NOTES Only the blossoms are edible; avoid if you have a peanut allergy

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Fast-growing plant usually under a foot high, forms dense mats. Leaves in whorls of four, papery, 2 inches long maximum, not as wide, variable in shape, little or no hair. Flowers yellow, stemless, wings and keels typical of peas

TIME OF YEAR It stays green all year but blossoms seasonally, usually from spring to fall.

RANGE Introduced; now found in Gulf States

ENVIRONMENT It is often planted in lawnlike areas where they don't want to mow, as it will drive out grass and other weeds. It can tolerate different soils but likes it on the acidic side. Likes full sun, good soil, well-drained. It likes to be within 30 degrees of the Equator.

METHOD OF PREPARATION Blossoms raw or cooked

Green Deane's Notes

Also known as the Rhizoma Peanut, Golden Glory, and Ornamental Peanut Grass, the Perennial Peanut is closely related to the peanut we commonly eat, *Arachis hypogaea* (which, by the way, has edible stems and leaves). Green parts of the Perennial Peanut are not edible, only the blossoms. Eat them raw or cooked.

The blossoms are bright yellow because of xanthophylls, pigment classified as carotenoids, which are considered antioxidants. We also find xanthophylls in peaches, squash, and papaya, and they also give marigolds, egg yolks, and yellow corn their color.

Perilla (Shiso)

Perilla frutescens

NOTABLE NUTRIENTS OR USES Phosphorus, magnesium, calcium, lipids, protein

SAFETY NOTES Can cause dermatitis. Contains chemicals known to be lung toxins for horses, cattle, goats, rodents

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Herbaceous plant with erect, purple, four-angled stems to a yard high, each with a single vertical groove per side. Leaves opposite, petiolate, purple, with very shallow groove. Blades ovate, serrated, to 4 inches long and 3 inches wide, may be curled or undulated, topside typically green and mostly hairless, underside purple and green or entirely purple and hairy on veins. Flowers grow in spikes, pink, four stamens, two

blossoms per node, each with a folded bract that's broadly ovate when unfolded.

TIME OF YEAR Flowering August to October

RANGE Native to Asia; cultivated worldwide

ENVIRONMENT Gravel bars, rich soils, alluvial soils or dry soils along streams, spring branches, gravel bars, roadsides, railroads.

METHOD OF PREPARATION Sprouts boiled, flower spikes fried, leaves for coloring or spice, seeds as spice

Nutrition Notes

Per 100 grams

23% carbohydrates, 25.38% protein, 42.27% lipids

Calcium	249.9 mg
Chromium	17.6 mg
Copper	0.2 mg
Iron	9.54 mg
Magnesium	261.7 mg
Phosphorus	677.2 mg
Zinc	4.22 mg

Green Deane's Notes

The first perilla I ever had came from a can, just like the kind sardines are packed in. The leaves were very spicy and were used that way, as a spice. Later, in my garden I grew the plant, which reseeded itself. That's probably why perilla is naturalized and invasive in the eastern US.

Perilla is a monotypic genus, though there are three varieties of *P. frutescens* (they differ in coloring). It has numerous common names, among them Shiso, beefsteak plant, Ji Soo, wild basil, Chinese Basil, Purple Mint, and rattlesnake weed.

Noses and palates disagree about what perilla, which is in the mint family, tastes and smells like. While licorice gets some votes, I lean toward spicy cinnamon. Use the leaves for flavoring. Perilla's sprouts can be steamed/boiled and eaten like a potherb, and its flower spikes can be fried or added to soup. You can also grind the seeds to use as a spice. The seed oil is edible; it has vitamin E and is very high in omega-3 fatty acids. But it's not great to cook with—you should use it cold, not heated. Similar to rapeseed or unrefined canola oil, perilla seed oil contains a chemical that's a potential lung toxin.

Persea

Persea borbonia, *Persea palustris*

NOTABLE NUTRIENTS OR USES No nutritional data available

SAFETY NOTES Toxic to dogs, cats, birds, fish, horses, cows, goats, rabbits

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen trees in laurel family with reddish-brown, scaly bark and slender, hairy twigs, *Persea borbonia*, up to 70 feet high and 3 feet in diameter; *P. palustris*, 30–40 feet tall. Leaves lance-shaped, 4 inches long, covered with galls (pebbly growths), shiny green on top, pale green on bottom, smell distinctly of bay leaves when crushed. Fruit small, blue or black, inedible drupes

TIME OF YEAR Year-round

RANGE The South, from Texas east

ENVIRONMENT *P. borbonia*, no place particularly wet or dry; *P. palustris*, swamps

METHOD OF PREPARATION Fresh or dried leaves for seasoning or tea

Green Deane's Notes

These species of persea know too well what it's like living in the shadow of a famous relative. They are related to *Persea americana*—which you know as the avocado. *P. palustris* and *P. borbonia* don't produce edible fruit as *P. americana* does; their drupes are left on the tree. But their leaves, fresh or dried, can be used for seasoning, just like bay leaves. You can also make a tea with them.

P. borbonia is called the red bay because of the reddish luster of its wood, which is prized for woodworking. Unfortunately, red bay trees have been dying in record numbers because of laurel wilt, a fungal disease spread by beetles.

It can be difficult to tell *P. palustris* and *P. borbonia* apart since one of their few differences comes down to the little hairs on the leaf stems: They are lying flat on *borbonia*, standing up on *palustris*. An easier difference to spot is their environment. *P. borbonia* grows where it's neither extremely wet

nor very dry, but *P. palustris* likes wet. Its common name is the swamp bay, after all.

Persimmon

Diospyros virginiana

NOTABLE NUTRIENTS OR USES Vitamin C, potassium, calcium, phosphorus, iron

SAFETY NOTES Consume persimmons in moderation, as they can cause an intestinal blockage; people with digestive issues or who have had gastric bypass surgery are at high risk. The fruit is toxic to horses. Fruit must be completely ripe before consuming.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Slow-growing tree to 80 feet but usually shrub-size, 8–20 feet, with fuzzy young twigs and older bark broken up into square blocks. Leaves oval, pointed, 3–6 inches long, lustrous dark green, sometimes covered with a harmless dark soot that can be washed off, different sizes on same branch when new growth. Fruit roughly spherical, one to eight seeds inside, skin orange-yellow and wrinkled when ripe.

TIME OF YEAR Fruit ripens September/October.

RANGE California, Utah, and eastern half of the United States, excluding northern border states

ENVIRONMENT Along edges of fields, roads, rivers, railroads, fences, trails. Will grow in dry ground and partial shade but prefers moist soil and full sun.

METHOD OF PREPARATION Fruit out of hand or as ingredient; leaves and seeds dried, the former for tea, latter as coffee extender

Nutrition Notes

Fruit, per 100 grams

25 calories, 0.3 g fat, 31 g carbohydrates, 1 g protein, 6 g fiber

Vitamin C	66 mg
Calcium	27 mg
Iron	2.5 mg
Phosphorus	26 mg
Potassium	310 mg
Sodium	1 mg

Green Deane's Notes

A 1942 issue of the journal *Science* reported that persimmon leaves are “exceptionally high” in vitamin C and that the “very acceptable” tea made from them tasted somewhat like sassafras. I’d say that is too generous, but perceptions can vary. My friend Beth has described persimmon leaf tea as tasting like dirty dishwater. I think the longer you store the leaves, the better the tea tastes. To prepare persimmon leaves for tea, dry them in a 140°F oven for 2 hours.

Few trees are more versatile than the persimmon. During the Civil War, the Confederate army used persimmon seeds as buttons. *Diospyros virginiana* produces North American ebony wood. As for edible uses, persimmons can be interchanged in any recipe with bananas, measure for measure. The fruit, which is the largest native berry in North America, can be eaten raw, dried,

frozen, or used in jelly, syrup, wine, bread, pudding, and other recipes. Its seeds can be roasted and ground for a coffee extender (only as an extender, not as the coffee itself). A cooking oil can be squeezed from the seeds.

Roast seeds for a coffee extender in the same slow oven that's drying the leaves. You can throw the tough fruit skins into a blender, spread the slurry on a cookie sheet, and dry them in the oven along with the seeds and leaves to make fruit leather.

Persimmons are usually the last trees to leaf out in the spring and the first to lose their leaves in the fall, a strategy to thwart predatory insects. Shaking a persimmon tree is the standard way of collecting the fruit. Persimmons will ripen on the tree, but the best ones are those that have fallen and you have to fight the ants for.

I can well remember the first time I found a persimmon on the ground. I was hiking along Rock Springs Run in central Florida, and I couldn't find the tree that the fruit came from! I turned 360 degrees and still couldn't see a persimmon tree ... until I looked way, way up. There, amid the other trees riverside, were spindly 70-foot tall persimmons. Incredibly tall, but not nine inches through. Very atypical. Yell County, Arkansas, has a champion persimmon that's 94 feet tall and 12.5 feet across, with a crown spread of 78 feet. That tree has been around since the English settlers first came to North America (one of them, Captain John Smith, wrote about the persimmon in 1608; he said it tasted like an apricot).

Persimmon is an anglicization of an Algonquian word that means "dry seed" or "dry fruit"—a reference to the high level of tannins in unripe persimmon fruit. The tannic acid in the green fruit was used to treat dysentery. Native Americans also made herbal medications from the persimmon for such conditions as thrush, sore throat, toothache, heartburn, and venereal disease. Twigs from a persimmon tree can reportedly serve a

remedy for the itch of poison ivy: Boil a few twigs for 20 minutes, strain and cool the liquid, and apply to the rash.

Pickereel Weed

Pontederia cordata

NOTABLE NUTRIENTS OR USES Iron, protein, fiber, calcium

SAFETY NOTES Make sure to avoid collecting water hyacinth, which should be cooked.

NATIVE STATUS Native



Nutrition Notes

Seeds, per 100 grams

calories NA, 7 g fat, 70.8 g carbohydrates, 8.9 g protein, 9.3 g fiber

Calcium	9.8 mg
Copper	0.2 mg
Iron	10.8 mg
Magnesium	2 mg
Phosphorus	4.5 mg
Potassium	39 mg
Zinc	0.5 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Large plant to 4 feet, produces one spike of 50–100 small lavender stalkless flowers. Leaves long, heart- or lance-shaped, with parallel, curved veins. Flower stem rises above leaves except for one leaf that grows behind flower. Mature fruit, on top of mature stems, has three cells, but only develops a large seed.

TIME OF YEAR Blossoms in summer (March to November in warm areas), seeds in fall

RANGE Eastern half of US plus Oregon

ENVIRONMENT Shallow water, like at the edge of a slow-moving stream, pond, or lake; shallow water, a foot deep or less

METHOD OF PREPARATION Seeds raw, roasted, boiled, or dried for flour; young leaves and stalks boiled

Green Deane's Notes

If plants could commiserate, pickerel weed would do so with the Natal plum. The latter has a deadly relative that gets more attention, the oleander. So, too, with pickerel weed: Its close cousin the water hyacinth (see [page 302](#)) is arguably the most despised and expensive weed in the world. While damning the water hyacinth, few praise pickerel weed.

The species is given a short shift in many foraging books. If pickerel weed comes from wholesome water, its leaves and seeds need no cooking. The best way to collect the seeds is to touch the seed spike and let them fall into your hand. They are nutritious and can be boiled like rice, roasted, or parched. I like to roast them lightly until dry; use a low setting in an oven that's under 170°F; I then take them on the trail with me. When dried, the seeds make a good flour for bread. Pickerel weed's unfurled young leaves

can be eaten raw or boiled for about 10 minutes. Leaf stalks are edible raw or boiled as well.

Deer are particularly fond of pickerel weed, as are muskrats and—no surprise—Pickerel Fish in northern climes. Pickerel weed has been around long enough to have its own bee for pollination: *Dufourea novaeangliae*, which does not visit any other plant for nectar and pollen. Mallards and other ducks eat the seeds.

Pine

Pinus spp.

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, vitamin E

SAFETY NOTES Important: Only use pine from the *Pinus* genus; some other plants are called “pines” but are toxic and not closely related. Some websites advise pregnant women against drinking pine needle tea, but the need for such a warning is debatable.

NATIVE STATUS Native and/or introduced



Nutrition Notes

Needles, per 100 grams

calories NA, 4.5 g fat, 39.9 g carbohydrates, 3.1 g protein, fiber NA

Vitamin A	385 RE
Vitamin C	168 mg
Vitamin E	7.1 mg
Calcium	8 mg
Iron	11.2 mg

Magnesium	234 mg
Manganese	1 mg
Phosphorus	55 mg
Potassium	628 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Resinous evergreen tree to 100 feet tall. Bark often flaky. Taproot up to 12 feet. Needles (mature leaves) up to 18 inches long, in clusters of three to five. Female cones up to 2 feet long and 10 pounds in weight. Seeds (nuts) range widely, from tiny to peanut-size, depending on species.

TIME OF YEAR Needles and inner bark available year-round, young male cones and pollen in spring

RANGE Varies by species, but covers many different habitats, from semi-arid deserts to rainforests

ENVIRONMENT Soil may be acidic, limestone, or sandy; most pines require good drainage.

METHOD OF PREPARATION Needles raw or as tea or seasoning; inner bark fried or made into flour; young male cones boiled; pollen, young roots raw

Green Deane's Notes

Forager Euell Gibbons became famous for asking, “Ever eat a pine tree?” in a 1970s cereal commercial. We all probably have an ancestor who ate a pine, or part of it, now and then. I know I do. And people may eat pine again. This genus of 100-plus species has served humanity well, for everything from famine food to ship masts. Wherever there have been pines and people, the people have depended on the pines—for food, wood, and medicine.

In an interview Gibbons said, “When I was a boy, we used to eat Ponderosa Pine for pleasure ... called it ‘slivers.’ In the spring the bark is really gorged with starches and sugars and tastes quite sweet. It’s also high in vitamins.” Gibbons was right about that. Pine needles may have vitamin C in amounts exceeding citrus. They also contain antioxidant compounds called carotenoids. Studies have shown that more antioxidants are preserved if the needles are used for tea rather than dried.

You can make tea by just putting a few needles or the tip of a young pine branch in hot (not boiling) water. Needles can also be eaten raw as a nibble or chopped and used like rosemary. The cambium of pines—the growing layer between the bark and the wood—makes a reasonable flour and is actually tasty when fried in olive or coconut oil. Cambium near the base of the tree is better than the cambium from the top.

Young male pine cones can be boiled and eaten. They are small, soft, and papery—technically, they’re microsporangiate strobili, not cones—whereas female cones are woody and tough. The best identification I can come up with is that a male pine “cone” looks like a small cluster of toasted coconut bits. Young pine roots are edible raw when peeled of their outer bark; the young root bark can be steeped for its sugar content.

Pine pollen is edible and high in protein. It’s been called “natural testosterone,” though its 0.03 mcg of androstenedione (per 100 milligrams) isn’t going to help anyone bulk up. As a large particle, pine pollen can’t travel too far. Many folks who think they have a pine allergy are actually allergic to other trees—birch, cedar, oak, sycamore—that are pollinating nearby.

And, of course, nearly everyone has had pine nuts. About 20 species of pine produce nuts—seeds, really—big enough to harvest for human food. If foraging is a hobby, collect a few brown, unopened female cones and place them near a fire or heater to make them open and release the seeds.

But first make sure you have a true pine. Several plants called “pines” are not: The Australian pine is more closely related to oaks than pines; the Norfolk Pine, while a very distant relative, is not in the genus *Pinus*; and the screw pine is more grass than tree. Species of *Pinus* are generally categorized as either softwood or hardwood pines. The wood is moderately dense on hard pines, low in density on soft pines. Needles are in groups of five per twig on soft pines, two or three to a twig on hard pines. Pinyons, where we get the familiar pine nuts in the US, are the only pines with one needle per twig.

Some sources advise pregnant women against drinking pine needle tea, but the need for such a warning is debatable. Here’s the history: After some incidents with cattle in the northwest United States and western Canada, a 1952 feeding study showed that consuming ponderosa pine needles interfered with pregnancies in cattle and bison. (Pine needles can make up to 40% of a cow’s diet.) Nothing similar happened to other animals, such as goats, sheep, and elk, when tested. Later research determined that, most likely, isocupressic acid was the chemical in ponderosa pine needles that affected progesterone and constricted blood vessels in the placenta. The issue was a concern only to western cattle producers, until the internet came along and the findings got misinterpreted to suggest that pine needles can cause abortions in humans. But it’s pregnant cows, not women, that should be kept away from ponderosa pine needles.

Researchers have found that white pine needles contain enough shikimic acid—the main crude ingredient in flu medication—to make its extraction commercially viable. Processed shikimic acid prevents the flu from reproducing, thus reducing symptoms and duration of the illness. Pine bark has nutrients, too, though it tends to be used medicinally, treating issues from high blood pressure to varicose veins.

Greeks use pine to flavor a white wine called retsina. This started by accident: They stored their wine in clay containers lined with pine pitch to

prevent leaking. The wine took on the subtle flavor of the pitch. To make your own retsina, put a pea-size piece of pine pitch in a bottle of cheap Chablis and let it set in the refrigerator for a long time.

Pineapple Weed

Matricaria discoidea

NOTABLE NUTRIENTS OR USES No nutritional information available; insect repellent

SAFETY NOTES Some people are allergic to this plant, so try carefully.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Annual plant; one or multiple cone-shaped flowers at ends of stems on short stalks. Flowers greenish yellow, from one quarter to one half inch in diameter. Leaves finely dissected and smell sweet (pineapple-like) when crushed.

TIME OF YEAR Late summer or winter

RANGE Throughout United States except Florida, Texas, Georgia, Mississippi

ENVIRONMENT Cool and dry areas, rocky soil, waste ground, nurseries

METHOD OF PREPARATION Leaves in tea, flower buds in salad

Green Deane's Notes

Pineapple weed, also known as Disc Mayweed, is one of the plants that I learned was edible from other kids. We lived near the wilderness in Maine with a lot of adults around who had foraged, so the pass-along knowledge was good, though the identifications could be iffy.

Every summer our driveway would be two glacial-dirt ruts with a few plants struggling to survive in between them. And that's where I would find pineapple weed, a dominant plant of that microenvironment. Our horses, which were also our lawn mowers, always left the pineapple weed alone; thus, all the more for me.

A hardpacked gravel driveway seems an unlikely place for a delicate plant that makes an excellent tea and salad nibble. But just like with its extremely close relative chamomile, you can brew tea with pineapple weed's leaves, fresh or dried. My nose could never tell *Matricaria discoidea* and *Matricaria chamomilla* (Chamomile) apart. Pineapple weed's young flower buds are edible too—add them to salads.

If you are inclined to gather *Matricaria discoidea*, be careful not to confuse it with young mayweed (*Anthemis cotula*) or dog fennel (*Eupatorium capillifolium*). Those plants grow much taller than pineapple weed—which in some environments won't even reach 2 inches high—and don't smell like pineapple when crushed (dog fennel has a strong balsam odor).

Plants in the *Matricaria* genus, including pineapple weed, contain terpenoids, phenolic compounds, and other chemicals that could have medicinal applications. Pineapple weed is also a natural insect repellent.

Plantago (Plantain)

Plantago major, *Plantago virginica*

NOTABLE NUTRIENTS OR USES Vitamin C, potassium, calcium, magnesium, phosphorus

SAFETY NOTES No known safety issues

NATIVE STATUS *P. major* introduced, *P. virginica* native



Nutrition Notes

Per 100 grams

61 calories, 0.3 g fat, 14.6 g carbohydrates, 2.5 g protein, 2.3 g fiber

Vitamin A	252 IU
Vitamin B2 (riboflavin)	0.28 mg
Vitamin B3 (niacin)	0.8 mg
Vitamin C	8 mg, 45.1 mg, 92 mg
Calcium	184 mg, 108 mg
Copper	0.2 mg
Iron	1.2 mg
Magnesium	95.3 mg

Phosphorus	52 mg, 23.4 mg, 40 mg
Potassium	277 mg, 318 mg
Sodium	16 mg
Zinc	0.41 mg
Beta-carotene	5.28 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Plantago major*, rosette of wide, oval, hairless leaves to 6 inches long and 3 inches wide, each with three to nine prominent veins. The U-shaped stems have threads in them when gently torn. Seed spike up to half a foot tall, first covered with small blossoms, then seeds. *P. virginica*, rosette of lance-shaped, lightly hairy leaves that may be toothed. Multiple tall, erect, solid, unbranched stems from base. Both species have internal threads: If you carefully break a stem where it meets the rosette, you'll find three to five elastic threads inside that remain attached.

TIME OF YEAR Depending on climate, greens in late winter or spring, seeds in late spring or summer

RANGE Nationwide except for northern Rocky Mountain states

ENVIRONMENT Unused fields, pastures, waste ground, lawns; likes full sun

METHOD OF PREPARATION Leaves raw or cooked; seeds raw

Green Deane's Notes

When I was about 10, a bee stung my hand while I was being a pest in the garden with my stepfather. He picked a large *Plantago major* leaf, chewed it, and stuck the green glob on the sting. Plantagos have multiple medicinal properties—most famously, their seeds (also known as psyllium) are the base material for the laxative Metamucil. A tea made from the leaves is said to be good for lung congestion and hay fever. In 2007, a Chinese study reported that *P. major* demonstrated tumor-inhibiting capacity in lab rats.

P. major is probably the most common plantago species in North America. The Native Americans called it “white man’s foot” because they noticed that wherever Europeans went—set foot, that is—the plant soon showed up. *P. virginica*, the dwarf plantain, is a common species as well. The species have very different leaves: skinny, hairy, and gray-green on *P. virginica*; rounder, smooth, and deeper green on *P. major*.

Plantagos are not related to the plantains you may know from Latin American or Caribbean cooking—those are in the banana family. Plantago leaves and seeds are edible (the latter will keep you regular). You can put raw young leaves in salads or cook them like greens in soups and stews. There is a small amount of oil in the leaves, comprising myristic acid, palmitic acid, and stearic acid, which are fatty acids. Oxalic acid content is low. So are nitrates; plantago leaves contain significantly less nitrates than spinach or beets.

Pokeweed

Phytolacca americana

NOTABLE NUTRIENTS OR USES Vitamin A, vitamin C, calcium, phosphorus

SAFETY NOTES Poisonous. Never eat uncooked.

NATIVE STATUS Native



Nutrition Notes

Cooked, per 100 grams

42 calories, 1.5 g fat, 3.01 g carbohydrates, 2.24 g protein, g fiber

Vitamin A	432 mg
Vitamin B1 (thiamine)	0.07 mg
Vitamin B2 (riboflavin)	0.24 mg
Vitamin B3 (niacin)	1.07 mg
Vitamin B6 (pyridoxine)	0.12 mg
Vitamin C	79.4 mg
Vitamin E	1.12 mg
Vitamin K	106.9 mcg
Calcium	43 mg

Iron	1.16 mg
Phosphorus	32 mg
Potassium	178 mg
Beta-carotene	5.06 mg
Lutein and zeaxanthin	1691 mcg

Green Deane's Itemized Plant Profile

IDENTIFICATION Red-stemmed plant 4–10 feet tall, may look scraggly but others may look handsome, depending on conditions. Leaves alternate, 4–10 inches long. Flowers green, white, or pink on stalks 6–8 inches long. Fruit round, dark-purple berries flat on top and bottom.

TIME OF YEAR Blossoms primarily in spring but can blossom all year if no frost

RANGE Much of eastern North America

ENVIRONMENT Likes rich, moist soil but is opportunistic; disturbed land often produces huge amounts.

METHOD OF PREPARATION *Never* raw. Young shoots boiled two or three times.

Green Deane's Notes

Pokeweed is controversial because it can make you quite sick, or even kill you, if it's prepared incorrectly. The roots—which you should never eat—are so toxic, you should wear gloves to handle the plant to avoid any possible contamination. When harvesting young shoots, always cut them with a knife or scissors as a precaution against getting any root material mixed in. Adding to the controversy around pokeweed is the debate over whether young shoots from seeds are less toxic than young shoots from old roots.

To consume the young shoots, boil them for 20 minutes, change the water and bring it to a boil, then cook 20 more minutes. You may want to change the water again and boil them a third time—it won't change the flavor. Drain your cooked greens well, as they absorb a lot of water. While boiling carries away water-soluble B and C vitamins (as well as the toxins), it does not remove beta-carotene and related pigments lutein and zeaxanthin. Vitamin A and these vitamin A precursors are pokeweed's most significant nutrients.

Some family traditions call for cooking pokeweed in ways that could make a doctor nervous. I often hear from folks saying their aunt or grandmother did this or that, or didn't do this or that, with pokeweed and everyone survived. But typically these are memories from when they were children and didn't really watch how the plant was cooked. Or, if you ask for details, you discover it wasn't pokeweed at all but some other plant that grandma cooked. Don't be led astray, either, by the phrase "poke salad." The dish's real name is poke sallet, which sounds like and is often written as "salad." *Sallet* is a word for cooked greens, so "poke salad" is not raw.

Poke berries, minus their seeds, have been mixed with grapes, sugar, and cornmeal and fermented for consumption. The fruit has had uses besides food: Dye and a permanent ink can be made from it, the strained, cooked, lavender-red juice of the ripe fruit can be used to color foods and was once used to add color to wine. It was so well-suited for it that this was made illegal. Research has also suggested compounds in pokeweed are antiviral and pokeweed proteins could have a positive effect on childhood leukemia and ovarian cancer.

Pony Foot

Dichondra carolinensis

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Low-growing plant that spreads by runners. Leaves kidney-shaped, dime size to more than an inch across, indented where they meet stem (a basal notch). Flowers white, tiny, and rarely seen.

TIME OF YEAR All year in warmer areas, spring to fall in cooler climes

RANGE Southern half of the US

ENVIRONMENT Open areas, near water, lawns, under spreading trees

METHOD OF PREPARATION Raw or cooked

Green Deane's Notes

The underfoot lawn plant called Pony Foot is edible—though people often wonder—but its usually mild leaves can be slightly bitter, so they're better mixed with other greens rather than used as the main ingredient. Toss them into salads or cook (boil, steam) them.

Pony Foot is often found with two other edibles that resemble it: Dollarweed, whose leaves are attached to stems in the middle of their underside, and Gotu Kola, which has rounded teeth on leaf margins and hairier stems (see separate entries).

I think Pony Foot leaves are not only bitter but medicinal-tasting. They taste a lot better without their runners. My herbalist friends call them a “liver tonic.” A tea made from dried and concentrated leaves is said to be medicinal.

Portia Tree (Seaside Mahoe)

Hibiscus pernambucensis

NOTABLE NUTRIENTS OR USES No nutritional data available; antioxidants

NATIVE STATUS Introduced in the US; native to the Caribbean, Mexico, and South America



Green Deane's Itemized Plant Profile

IDENTIFICATION Bark of limbs and trunks is gray, smooth, furrowed, and scaly when old. Leaves are nearly round (4–6 inches in diameter) except for a heart-shaped base and pointed tip. Stems are long (2.5–3.5 inches). Flowers large and yellow, changing to orange or red as they age. Hairy, cone-shaped seed capsules develop and, when dry, split along five lines to release seeds.

TIME OF YEAR Year-round

RANGE Southern Florida in the US

ENVIRONMENT Usually, just inland of mangroves around brackish lakes and along rivers in the lower reaches of their floodplains; also beachfronts, hummocks, sand dunes, and landscaping

METHOD OF PREPARATION Flowers raw or cooked; leaves, bark, and roots cooked as famine food

Green Deane's Notes

The Amapola—another name for seaside mahoe—is on the go. But unlike the “walking” mangrove, the Amapola crawls. It closely resembles the mahoe and milo (see [page 184](#)): Like those two, the Amapola has yellow flowers that darken over the course of the day, in this case to orange. Unlike the mahoe and milo, its flowers lack a dark throat. Heart-shaped leaves also tell you that you have the Amapola.

This is a tropical, short tree, usually reaching 15 feet in height and growing in colonies. It grows nicely in well-drained, organic soils but tolerates salty and sandy ones—though it's less tolerant of saline conditions than mangroves. The Amapola is often seen “crawling” across low dunes. The tree can't grow in the forest or too close to the high tide mark. So it grows close to the high water mark, then falls over. Where the trunk and branches touch the soil, it sends out roots and grows along the ground. It is often found in tangled thickets. Bees like the flowers, as do hummingbirds.

The flowers make a colorful and tasty salad ingredient or can be cooked like a vegetable via boiling or frying. The young leaves, bark, and roots have been cooked and eaten by people without access to other foods. Although specific nutritional breakdowns are difficult to find, some research says that hibiscus species contain anthocyanins, or plant pigments that have antioxidant properties. Research also shows extracts of the portia's bark has antimicrobial activity and can be used to treat skin infections.

The Amapola's wood is white, straight-grained, light, and easy to work; when dry, it burns readily. The fibrous inner bark has been used to make rope, cord, fishnets, floats, cloth, and mats. The tree is also planted as an ornamental, as a "living fence," (one plant can create a "fence," but several make a fence faster), or to stabilize stream banks and beaches.

Prairie Turnip

Pediomelum esculentum, *Pediomelum hypogaeum* var.
hypogaeum

NOTABLE NUTRIENTS OR USES Starch, protein, fiber, calcium, potassium

SAFETY NOTES Seeds inedible

NATIVE STATUS Native



Nutrition Notes

Per 100 grams

156 calories, 0.4 g fat, 36 g carbohydrates, 7.65 g protein, 7.55 g fiber

Vitamin B6 (pyridoxine)	0.33 mg
Vitamin C	6 mg
Calcium	387.5 mg
Copper	0.22 mg
Iron	3.71 mg
Magnesium	155.9 mg
Manganese	0.71 mcg
Phosphorus	53.65 mg
Potassium	502.5 mg

Sodium	<10 mg
Zinc	0.94 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Multiyear perennial with dense hairy stems. Leaves palmately compound, curled, divided into five leaflets. Blue and/or purple flowers in terminal clusters. After blossoming, stalks break off and spread inedible seeds. Tubers resemble onions.

TIME OF YEAR Traditionally harvested in May and June

RANGE The middle portion of North America

ENVIRONMENT Mixed-grass prairie; ridges; slopes; open woodlands; well-drained, never soggy soil

METHOD OF PREPARATION Peeled tubers raw, roasted, boiled, dried and ground into meal

Green Deane's Notes

The prairie turnip, also called pomme blanche or breadroot, is famous as a sustaining wild food. It's in the legume league, a relative of the garden pea, and more than 60% starch. The edible tubers get woodier and tougher as they age, so eat them by middle age. These mild, earthy pseudo-turnips have a good nutritional complement.

Prairie turnips were a staple of more than a dozen Native groups of the Great Plains. *Pediomelum esculentum* is known as Large Indian Breadroot, and *Pediomelum hypogaeum* var. *hypogaeum* as Little Indian Breadroot. They kept many a Native and settler alive and today are a commercial crop.

Purslane

Portulaca oleracea

NOTABLE NUTRIENTS OR USES Vitamin A, vitamin C, vitamin E, melatonin

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION Low-growing, fleshy plant with hairless, reddish stems and clear sap. Leaves alternate, spatulate, clustered at stem joints and ends. Flowers yellow; tiny seeds in capsule pods that resemble tiny barrels



Nutrition Notes

Per 100 grams

Raw: 2.03 g protein Cooked: 1.5 g protein

Vitamin A	1320 IU (raw), 1852 IU (cooked)
Vitamin B1 (thiamine)	0.05 mg (raw), 0.03 mg (cooked)
Vitamin B2 (riboflavin)	0.11 mg (raw), 0.9 mg (cooked)

Vitamin B3 (niacin)	0.48 mg (raw), 0.46 mg (cooked)
Vitamin C	21 mg (raw), 10 mg (cooked)
Vitamin E	8 mg (raw)
Calcium	65 mg (raw), 78 mg (cooked)
Copper	0.11 mg (raw or cooked)
Magnesium	68 mg (raw), 67 mg (cooked)
Manganese	0.31 mg (raw or cooked)
Phosphorus	44 mg (raw), 37 mg (cooked)
Potassium	494 mg (raw), 488 mg (cooked)
Selenium	0.9 mcg (raw or cooked)
Zinc	0.17 mg (raw or cooked)

TIME OF YEAR Spring and summer in northern climes, year-round in warmer areas

RANGE Native to Eurasia; now found in most of North America

ENVIRONMENT Nearly any disturbed grass; likes full sun, tolerates summer heat

METHOD OF PREPARATION Raw, in soup, or pickled

Green Deane's Notes

Her name was Zona. She was a spry widow and had been a best friend, making her almost family. Her oldest son married the youngest daughter of my grandmother's lifelong best friend. I went to high school with Zona's granddaughter, and I still keep in touch with one of Zona's grandsons, in Pownal, Maine.

Zona also had weeds, lots of weeds. While visiting my parents once, I was asked to take a look at her weeds. Zona's house sat on a hill amid fields. The lowest field was also the floodplain for the Royal River (which if it had been named for its true size would have been called the Royal Trickle). Every spring, melting snow swelled the "river" to near-regal proportions and flooded Zona's lower field, leaving it with rich, friable soil.

So I looked at her black-earth garden. What Zona had was the most beautiful and ambitious plot of self-seeded purslane I have ever seen, before or since. It was truly an incredible bounty: deep green, plump, healthy, and about as full of life and happy as any plant can be.

As I stood there in amazement, she asked me if I knew what it was. I said yes, it was one of the most nutritious greens on Earth and how fortunate she was. “*That?*” she replied, pointing incredulously at her garden. “You can eat that? It’s a weed!” “That,” I told her, “is esteemed around the world.” The crusty old gal said, “I ain’t goin’ to eat no g—damn weed,” and that was that.

If Zona lived in another country, she might not have been so resistant to the purslane. It is sold in produce markets nearly everywhere except the United States. Eat the leaves and stems of purslane raw in salads, or cook them in soups. They have a slightly sour/salty taste. You can also pickle the thick stems.

Purslane is not only vitamin-rich but also high, as vegetables go, in healthy omega-3 and -6 fatty acids. It contains more omega-3s than any other plant source. It also had 10–20 times more melatonin (a sleep aid) than any other fruit or vegetable tested by experts at the University of Texas at San Antonio. And the pigments in its leaves and yellow blossoms are antioxidant.

This weed—Little Hogweed, per USDA’s preference—is underfoot virtually everywhere, including Walden Pond apparently. Henry David Thoreau penned in *Walden* (1854): “I learned from my two years’ experience that it would cost incredibly little trouble to obtain one’s necessary food I have made a satisfactory dinner, satisfactory on several accounts, simply off a dish of purslane (*Portulaca oleracea*) which I gathered in my cornfield, boiled and salted. I give the Latin on account of the savoriness of the trivial name Yet men have come to such a pass

that they frequently starve, not for want of necessities but for want of luxuries”

One can even find purslane in places like New York City. The strain I grow in my garden came from a sidewalk crack in Tarpon Springs, Florida, about 20 years ago. It had survived a freezing cold snap nestled next to a restaurant. I thought something that hardy would be a good addition to my garden. Now I don’t have to plant it. I have tried cultivated versions, and they simply are not as tasty or prolific as my survivor purslane. By the way, the seeds have a 30-year shelf life.

Quack Grass

Elymus repens

NOTABLE NUTRIENTS OR USES Protein, carbohydrates

SAFETY NOTES See identification notes below.

NATIVE STATUS Introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial grass reaching 3.5 feet in height and growing from whitish or yellowish rhizomes (creeping underground stems) that attack other species. Blades/leaves 1.5–12 inches long, very skinny, blue-green, may have hairs on upper surface, underside hairless. Short ligules (projections inside sheaths) with narrow auricles that clasp sheaths. Flower a narrow, spiky seed head 2–8 inches long with many spikelets in two rows along stem, producing fewer than 50 seeds per plant. To differentiate *Elymus repens* from other grasses, look for rhizomes, auricles, and seed heads.

TIME OF YEAR Can flower spring to fall, which is also when rhizomes are harvested

RANGE Native to Eurasia; found in most of North America

ENVIRONMENT Crop fields, turfgrass, lawns, moist meadows, urban landscapes, disturbed areas

METHOD OF PREPARATION Roots dried and ground for flour or roasted for coffee substitute; seeds winnowed and singed for porridge; young leaves and shoots raw



Nutrition Notes

Roots, per 100 grams

428.5 calories, fat NA, 40% carbohydrates, 6% protein, 3.4 g fiber

Iron	0.38–0.69 mg
Potassium	0.71–1.08 mg

Green Deane's Notes

Plants of little use often have only one common name. Plants that are valued or considered a pest usually have too many names. Such is the case

with quack grass, also called couch grass, quitch, twitch, witchgrass, and a couple dozen other names.

Many people know quack grass as a hard-to-get-rid-of weed found among corn and soybean crops, resistant to a variety of herbicides. Or they've read on the internet about its herbal applications, including as a diuretic—though websites may fail to clarify whether to use the grain, blades, or rhizomes.

What gets overlooked is quack grass as food. The starchy roots (rhizomes) are attractive to foragers. They can be dried and ground, to be used like flour. Roasted roots can be ground to make a chicory coffee-like drink. Young leaves and shoots are edible raw. Grain from the seed heads, winnowed and singed of hair, could make a porridge. Boiled roots can even be used to make a sort of beer, and the slightly yellow flour was mixed with other flours in sourdough bread. There is no detailed nutritional profile for quack grass, but the Ohio State University reported that the rhizomes are high in minerals and thiamine (vitamin B1). The seeds are 12% oil, which contains triticin, a carbohydrate substance related to insulin.

Quickweed

Galinsoga spp.

NOTABLE NUTRIENTS OR USES Vitamin C, calcium, magnesium, potassium, phosphorus

SAFETY NOTES Toxic to goats; a toxic lookalike exists. See below.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Leafy plant to 2 feet tall. Leaves opposite, oval, coarsely toothed, on stalks. Flowers in heads of yellow disc surrounded by four or five widely spaced, small, toothed white or pink petals, petals with indented tips

TIME OF YEAR May through fall in northern areas, nearly year-round farther south

RANGE Everywhere in North America except the desert Southwest

ENVIRONMENT Waste ground, cultivated areas, roadsides, gardens, dooryards, lowland fields. Prefers damp, rich soil and plenty of sunshine

METHOD OF PREPARATION Leaves boiled, dried, raw in salad.

Nutrition Notes

Leaves, per 100 grams

37 calories, 0.4 g fat, 5.2 g carbohydrates, 3.2 g protein, 1.1 g fiber

Vitamin B1 (thiamine)	0.08 mg
Vitamin B2 (riboflavin)	0.21 mg
Vitamin B3 (niacin)	1.21 mg
Vitamin C	6.7 mg
Calcium	284 mg
Iron	5.3 mg
Magnesium	60 mg
Potassium	58 mg
Zinc	1.3 mg
Beta-carotene	4 mg

Nutrition Notes: *G. parviflora*

Per 100 grams

42 calories, 0.5 g fat, 8.3 g carbohydrates, 3.2 g protein, 1.3 g fiber

Vitamin A	112 RE
Vitamin B1 (thiamine)	0.11 mg
Vitamin B2 (riboflavin)	0.27 mg
Vitamin B3 (niacin)	2.1 mg
Vitamin C	30 mg
Calcium	245 mg
Iron	7.1 mg
Phosphorus	45 mg

Green Deane's Notes

Quickweed does not look edible. It looks like a daisy that lost a fight. But the entire plant is edible save the roots. The leaves are the best part.

Galinsoga ciliata and *G. parvifolia* are good potherbs. Pick a lot because they cook down. Put the greens in boiling water for 10–15 minutes; top with butter, salt, and pepper to serve. *G. parvifolia*, being less hairy, is used as a salad green as well. Dried leaves from Quickweed can be used for flavoring.

Also called gallant soldier (*G. parvifolia*) and Shaggy Soldier (*G. ciliata*), Quickweed has a toxic lookalike, *Tridax procumbens*, aka Coat Buttons. The blossoms are nearly identical, so you have to look at the rest of the plant to tell them apart: *Tridax procumbens* is more viney and low-growing, except for its flower stalks. With *Galinsoga*, the whole plant grows upward.

Ragweed

Ambrosia artemisiifolia

NOTABLE NUTRIENTS OR USES No nutritional information available; protein, fat

SAFETY NOTES Ragweed is infamous as an allergen.

NATIVE STATUS Native to all states except Nevada, Hawaii, and Alaska



Green Deane's Itemized Plant Profile

IDENTIFICATION Annual 3–12 feet tall, branching occasionally. Leaves opposite, to a foot long and 8 inches wide, usually serrated, petioles long and sometimes winged. Larger leaves have three or five lobes, smaller leaves near base of flower lance-shaped, often hairy underneath. Green stems covered with white hairs; upper stems terminate in a cylindrical flower spike to 6 inches long. Small flowers yellowish green, no petals or sepals, in drooping clusters. Seeds are large, tough-coated; there are possibly in excess of 5,000 total per plant.

TIME OF YEAR Flowers late summer or early fall, seeds follow

RANGE Found in most of North America, as well as Central America and South America

ENVIRONMENT Full sun to light shade; moist, fertile soil

METHOD OF PREPARATION Seeds raw, parched, or for oil; leaves boiled (possibly)

Green Deane's Notes

Six hundred or so years ago, some Native Americans stopped cultivating a particular crop and moved on to maize. That crop was ragweed, the most hay fever-causing plant in the world. No one alive knows why ragweed fell out of favor, though it certainly is not favored nowadays by farmers, who view it as a vile invader that chokes domestic crops.

Perhaps it's time to reconsider ragweed, as a lost grain. There is almost no documentation of modern-day consumption of ragweed, but I don't think it would hurt to eat a few seeds raw. The seeds are about 47% crude protein and 38% crude fat—an energy powerhouse. I've eaten them out of hand. They taste like wheat bran. Perhaps they could be parched, then eaten. I know a retired doctor in south Florida who's told me he eats ragweed greens—he boils them twice, to moderate the flavor.

The seed oil is edible. Ragweed is on par with soybeans as far as oil production: about one fifth the seed weight. Some reports say Native Americans would grind the seeds and bring them to a boil in water, then ladle off the oil that floated to the top. The Indians may have eaten the seeds whole, however, as Peter Goodchild, author of *Survival Skills of the North American Indians*, observed, “Judging from other uses of oily seeds, the Natives are unlikely to have done any processing of the seeds. Generally that's not practical without modern machinery ... it's far easier just to eat the seeds.”

Several academic reports have mentioned Natives eating the seeds, though they don't go into detail. We know from archaeological research on Ozark cliff dwellers that they stored grain from giant ragweed (*Ambrosia trifida*) along with corn, beans, sunflowers, squash, and pumpkins. Whether they used it for food or oil is not known, and if it was the latter, it might have been for medicinal purposes. The Papago tribe (in Arizona) ate the roots of *A. tenuifolia*, the Slimleaf Bur Ragweed, after drying them in the sun, according to ethnobotanist and anthropology professor Daniel Moerman. They also ate the stalks as greens. Elsewhere, Natives used ragweed stalks for rope and made a green dye from the stems and leaves of *A. peruviana*. Various ragweed species were also used medicinally.

As an allergen, ragweed is second only to mold in causing symptoms. A single plant can produce a million or more grains of pollen daily. Several plants in the same family as ragweed also may be allergenic, including sagebrush, marsh elder, cocklebur, Desert Broom, and dog fennel. Goldenrod is wrongly blamed for causing allergic reactions because it blooms at the same time as ragweed, but its pollen is too heavy to be windblown.

Raspberry

Rubus idaeus

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, calcium, magnesium, vitamin C

SAFETY NOTES No known safety issues

NATIVE STATUS Native to Northern Hemisphere



Green Deane's Itemized Plant Profile

IDENTIFICATION Short shrub with bristly or prickly, reddish-green, arching twigs 3–5 feet long, do not root at tips. Leaves alternate, 5–8 inches long, pinnately compound with 3–7 serrated leaflets, green above and nearly white below, very fine prickles or hairs on petioles. Flowers greenish, very small white petals that fall away quickly, not showy. Fruit red (or black)

juicy drupes, multiple grow close together, separate from fleshy cores when picked.

Nutrition Notes	
Per 100 grams	
62 calories, 0.28 g fat, 13.85 carbohydrates, 1.12 g protein, 7.5 g fiber	
Vitamin A	50 IU
Vitamin B1 (thiamine)	0.02 mg
Vitamin B2 (riboflavin)	0.08 mg
Vitamin B3 (niacin)	1.03 mg
Vitamin B5 (pantothenic acid)	0.3 mg
Vitamin B6 (pyridoxine)	0.1 mg
Vitamin B9 (folic acid)	5 mcg
Vitamin C	26.4 mg
Vitamin E	0.57 mg
Vitamin K	6.6 mcg
Calcium	36 mg
Copper	0.1 mg
Magnesium	26 mg
Manganese	0.37 mg
Phosphorus	41 mg
Potassium	175 mg
Sodium	4 mg
Zinc	0.47 mg
Beta-carotene	13 mcg
Betaine	0.5 mg
Choline	9.5 mg
Lutein and zeaxanthin	130 mcg

TIME OF YEAR Flowers appear late spring to early summer. Fruit ripens late spring to late summer (usually middle of summer), depending on climate and variety.

RANGE Throughout North America except the Deep South

ENVIRONMENT Full sun, neither too wet nor too dry

METHOD OF PREPARATION Fresh, frozen, canned, as ingredient

Green Deane's Notes

Raspberries were the first wild fruit I noticed on my own. They grew on a forested hillside with mesic conditions near a woods road. They looked like the kind I saw in the store, so I ate them. No asking, no checking. I just ate them. Kids do that.

Raspberries and blackberries are very closely related cousins (as are plums and cherries). The easiest way to tell them apart is after you pick the fruit. The raspberry will be hollow, leaving a small cone—its core and stem—on the bush; the blackberry will have a little stem in it. Another difference is that raspberries are hairy, blackberries are not.

Raspberries and blackberries, which are in the rose family, both fruit in their second year. Because raspberries don't have their center after being picked, they are sweeter than blackberries—though they also don't store as well without the cores. You can freeze raspberries, make jam or jelly with them, use them in pie, tea, ice cream, wine, and more—but they're best of all eaten fresh on the trail. Dried raspberry leaves can be made into tea.

A 100-gram serving of fresh raspberries provides about a third of your daily need of vitamin C. They also have antioxidants and are good for eye health. Medicinal uses of the dried leaves have included treating diarrhea and regulating menses.

While *Rubus idaeus*, the Common Wild Raspberry, is red, other varieties are yellow, pink, purple (a cross between red and black), or black. Red raspberries ripen first, then black, next purple, and last yellow.

Red Spiderling

Boerhavia diffusa

NOTABLE NUTRIENTS OR USES Vitamin C, niacin, riboflavin, calcium, magnesium

SAFETY NOTES The cooked roots can be peppery. Try a little at first.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial or annual, usually profusely branched, with base and taproot that may be woody. Stems loosely spreading, ascending, or erect; branches hairless. Leaves mostly on lower half of plant, lance-shaped or oval (could even be round or wedge-shaped), wavy edges, larger leaves with petioles. Flowers very small, terminal, purplish red or reddish pink or nearly white

TIME OF YEAR Summer—fall in temperate areas

RANGE California, Texas, Southeast

ENVIRONMENT Disturbed areas, waste places, roadsides, dry pinelands, scrub on tropical reefs, sidewalks

METHOD OF PREPARATION Young shoots, leaves, boiled. Root lightly roasted.

Nutrition Notes

Per 100 grams

10.5 calories, 1.6% fat, 10.56% carbohydrates, 2.25% protein, fiber NA

Vitamin B2 (riboflavin)	22 mg
Vitamin B3 (niacin)	97 mg
Vitamin C	44.8 mg
Aluminum	0.46 mg
Calcium	174.09 mg
Magnesium	8.68 mg
Manganese	0.43 mg
Sodium	162.5 mg

Green Deane's Notes

I used to know an Algerian physics professor who taught botany. Older and portly, he went into the woods foraging (in mosquito-swamped Florida) wearing only shorts and horn-rimmed glasses. No shoes, no shirt, no hat. He called *Boerhavia diffusa* Soldier Weed, noting that it shows up everywhere soldiers go. That may or may not be true. Most people know the plant as Red Spiderling or Tar Vine; some call it Wine Vine because of the color of its tiny blossoms.

Red Spiderling rarely grows in wholesome places. One often sees it eking out a life in the sun in sidewalk cracks, gas station curbs, rusty fences where dogs piddle, or gnarly trash piles. Good thing *Boerhavia diffusa* isn't judged by the company it keeps. It has provided good food for cattle, pigs, and rabbits in the United States.

For humans, its young shoots and leaves can be boiled or made into a sauce. The roots can be roasted, but they may be woody and have a tough skin. Eat

sparingly and carefully, as they are more medicinal than edible. Peel them before eating or before cooking. The roots taste like carrots, or like parsnip, some say they're bland, and others find them peppery.

Aboriginal Australians ate the roots raw (those can raise blood pressure and increase urination). In Australia, the plant is home to a caterpillar, *Celerio lineata livornicoides*, that the Aboriginal people call *ayepe-arenye*. The Aboriginals would squeeze out the caterpillar's viscera, cook the body, then leave it on a rock for a few days before eating it.

B. diffusa is called Tar Vine because it can stick to you and other things. The Aboriginals would use it like a net to capture small birds. There is another species, *Boerhavia erecta*, which has white flowers and is considered by some botanists a variation of the *diffusa* species. Whether *Boerhavia* has one or two or as many as 40 species, or if they're all just variations, is a bit of debate. You may see other scientific and common names—botanists are cluttering the literature with their egos.

Reindeer Moss

Cladonia rangiferina

NOTABLE NUTRIENTS OR USES Carbohydrates, protein, fiber, vitamin A

SAFETY NOTES See preparation details below.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Spongy, grayish moss up to 4 inches thick forming clumps or extensive mats 3 or 4 inches high. Richly branched, each branch dividing into four, with the main branches distinctly curved in the same direction (look like the tubes inside lungs).

TIME OF YEAR Always

RANGE Circumpolar distribution; found in Canada and the northern half of the US; can be found as far south as Florida

ENVIRONMENT Well-drained open areas, sandy scrubland, alpine environments in the North. Prefers acid soil, grows where other plants will not.

METHOD OF PREPARATION Must be soaked/boiled in copious amounts of water, or water with wood ash, or water with sodium bicarbonate or potash to get rid of acids. Then it can be added to various foods, wet or dry, but it must be cooked well.



Nutrition Notes

2.1% fat, 5.4% protein, 32.9% fiber

Green Deane's Notes

Lichens can be harder to tell apart than twins in the dark. It takes a lichenologist to know for sure, but fortunately only two of the 20,000 or so species of lichen are known to be poisonous when consumed, *Letharia vulpina* (Wolf Lichen) and *Vulpicida pinastri* (Powdered Sunshine Lichen), and conveniently they are both yellowish.

One of the most widespread and commonly eaten lichen, by beast and brute alike, is reindeer moss, *Cladonia rangiferina*, also known as *Cladina rangiferina*. Related species include *Cladonia cristatella*, *Cladonia evansii*, and *Cladonia subtenuis*. Reindeer moss tends to grow in clumps, but some species of lichen grow in flakes, as commonly seen on trees, or in powdery patches. Other types are known as crust lichen, like what grows on gravestones, or look like a combination of flakes and crust. All lichens exist due to a symbiotic relationship between fungi and algae, with fungi providing the form and algae the “operating system” inside.

Lichens are typically made up mostly of carbohydrates—more carbs proportionally than potatoes. But along with those carbs is a lot of rock-dissolving acid that can burn your insides, which is why reindeer moss has to be prepared before it is cooked and consumed. Untreated lichen tastes like aspirin; that should motivate you to prepare it correctly, just in case the prospect of the acid painfully attacking your digestive tract doesn't. *C. rangiferina* is among the least acidic, and most nutritious, lichens. It contains protein, vitamin A, niacin, calcium, phosphorus, and other nutrients.

To prepare lichen, soak or boil it in copious amounts of water, preferably with sodium bicarbonate (baking soda) mixed in, and change the water several times. Generally you shouldn't eat unprepared lichen, though I eat small bits of raw lichen for demonstration in my foraging classes, and I saw Dick Deuerling, a leading foraging authority in Florida, nibble on *Cladonia evansii* while out on the trail—just picked some up, crushed it in his hand, and downed it. (He also told me he crumpled it and dropped it into soup.) Lichen is often cooked until it turns into a gelatinous mass. My mother remembered her mother using prepared lichen to make a pudding. You can add cooked lichen to many dishes.

Before you even get to the point of preparing reindeer moss for cooking and consumption, you have to choose it carefully. It can live for thousands of years, growing very slowly (one or two centimeters a year), and can stay intact even longer, so it may collect a lot of pollutants in that time. One point to consider is whether to eat lichen at all in populated areas or in farming communities where pesticides are deployed.

Lichen has a surprising culinary history. Lichen alcohol—an alternative to grain alcohol—was produced in Europe, primarily Sweden, in the 1800s. There was also lichen brandy, and lichen was used in aquavit, a spirit traditionally flavored with caraway. Russia managed to make a molasses

out of lichen, and woodsmen in northern Canada reportedly used rock lichen to brew a “stimulating” tea.

Rose

Rosa spp.

NOTABLE NUTRIENTS OR USES Vitamin A, lutein and zeaxanthin, potassium, vitamin C, lycopene

SAFETY NOTES No known safety issues

NATIVE STATUS Native and/or introduced



IDENTIFICATION Usually a low shrub but can be climbing like a vine; sharp prickles; flowers come in almost all colors except blue, with five petals. Flowers turn into “hips,” which are bright red and persist on the plant.

TIME OF YEAR In cooler climates, late spring to summer. They fruit summer into fall.

RANGE Native to Asia, Europe, North Africa and North America, depending on species

ENVIRONMENT Full sun and well-drained soil

METHOD OF PREPARATION Petals with white ends removed and hips minus seeds in tea, jam, chutney, wine, and more

Nutrition Notes

Rose hips, per 100 grams

162 calories, 0.34 g fat, 38.22 g carbohydrates, 1.6 g protein, 24.1 g fiber

Vitamin A	4345 IU
Vitamin B1 (thiamine)	0.02 mg
Vitamin B2 (riboflavin)	0.17 mg
Vitamin B3 (niacin)	1.3 mg
Vitamin B5 (pantothenic acid)	0.8 mg
Vitamin B6 (pyridoxine)	0.08 mg
Vitamin B9 (folic acid)	3 mcg
Vitamin C	426 mg
Vitamin E	5.84 mg
Vitamin K	25.9 mcg
Calcium	169 mg
Copper	0.11 mg
Iron	1.06 mg
Magnesium	69 mg
Manganese	1.02 mg
Phosphorus	61 mg
Potassium	429 mg
Sodium	4 mg
Zinc	0.25 mg

Beta-carotene	2.35 mg
Betaine	2.9 mg
Choline	12 mg
Lutein and zeaxanthin	2 mg
Lycopene	6.8 mg

Nutrition Notes

Dried petals, per 100 grams

0.2 g fat, 70.4 g carbohydrates, 0.5 g protein, 1.2 g fiber

Vitamin C	0.2 mg
Calcium	120 mg
Iron	3.7 mg

Green Deane's Notes

At one point I had a job delivering flowers. What an eye-opening experience that was! I went in thinking it would be wonderful because you were delivering joy everywhere. Wrong ... oh so wrong. It was amazing how many women refused flower deliveries or took them with a huge air of suspicion, maybe even outright asking, “What did he do this time?”

Anyway, the roses I delivered were big and beautiful and absolutely without aroma. They were bred for size and color, and in the process the fragrance completely disappeared. We had to spray the roses with artificial rose scent just before delivery—but not inside the delivery van, or you’d smell intensely like roses for days.

As a child, I’d had a difficult time reconciling that the wild roses in the field behind the house were related to the roses in flower shops. When I was growing up in New England, the local soil was usually either ice-ground sand (or clay) or ledge (rock). Not much of a choice if you’re a plant. We had sand, over ledge, with a thin layer of topsoil. And in that sand grew wild roses, *Rosa rugosa*. Long and stringy, with pink petals and bright

yellow centers, they had a hint of rose aroma. And they didn't look that much like roses you get from florists.

For edibility, the rose is probably best known for rose hips, a so-called false fruit produced after flowers are pollinated. (The hips are false in the sense that the fruit doesn't develop from a floral ovary.) Rose hips vary greatly in taste and size, and a frost improves their flavor. You have to process them first to remove their seeds. If you consume rose hips with their seeds (the true fruit of the rose), you can get what Aboriginal Australians call Itchy Bottom Disease from the hair on the seeds.

Sap from a fresh hip can be used like sweet syrup. Soft rose hips, once they're deseeded, can be blended or put in a food processor to make a tasty, dark red puree that's a base for syrup, jam, chutney, or sauce. Dried rose hips are used to make a fruity tea that has about 50 times more vitamin C than citrus. You can also grind dried rose hips into a powder to be added to breads, cookies, cakes, and other desserts.

Rose petals are also edible, after you remove any white portions, which would taste bitter. Petal flavor depends on the type, color, and growing conditions. It can range from tart to sweet or spicy. Darker petals have stronger flavors. Petals can be added to salads or desserts, used to make jelly and jam, or candied. Rose petals are used to flavor tea, wine, liqueur, honey, and vinegar.

Russian Thistle (Tumbleweed)

Salsola kali ssp. *tragus*

NOTABLE NUTRIENTS OR USES No nutritional information available; vitamin A, protein, fiber

SAFETY NOTES The plant can contain as much as 5% oxalic acid; thus, folks who are sensitive to oxalic acid should avoid the genus. Tumbleweed pollen is also a bane of allergy sufferers. And if you eat it when it's too old, the shape of the leaves—fat and pointed—will irritate your throat.

NATIVE STATUS Native to Eurasia; introduced in the US in the 1870s; highly invasive



Green Deane's Itemized Plant Profile

IDENTIFICATION Annual herb to 5 feet tall, usually less than 3 feet, bushy, branching from base, upright or almost prostrate. Leaves and bracts fleshy, flattish, short, tipped with sharp spines. Flowers with five narrow, whitish petals, solitary, unstalked. Older branches serpentine, purplish.

TIME OF YEAR Late summer to fall in some areas, in others nearly year-round

RANGE All of North America

ENVIRONMENT Sandy areas, seashores, some desert environments, salty areas, beside northern roads because of salt or western roads because of open space, railroad tracks

METHOD OF PREPARATION Young shoots raw or cooked, tips of growing plants raw or cooked. Its seeds are reportedly edible, but I've never tried them. The mature plant has been used to make glass and soap.

Green Deane's Notes

When you first encounter Russian thistle—one of several plants commonly called a tumbleweed—it's the very last plant you would consider edible. Wiry, tough, sharp, prickly, and irritating, it kind of reminds me of a green sand spur on steroids.

However, the young shoots and tips of the growing plant are edible raw and actually quite palatable and pickable. Cooked like greens, they're even better. As the plant ages, though, it grows tough and formidable. Dried ones tumbling across deserted areas are a classic visual cue of desolation in Western movies and TV shows.

The most reliable species to eat is *Salsola kali*, which is believed to have arrived in the United States in the early 1870s, when Russian immigrants to South Dakota brought flaxseed from home that had *Salsola* seeds mixed in. By 1873, local botanists declared there was a new weed in town. By 1895, it had spread from the remote north middle of the country to New Jersey and California.

Lyster Hoxie Dewey, a botanist for the US Department of Agriculture, said in two reports in 1893 and 1894 that he knew how the plant was spreading: by train. He documented *Salsola* growing along railroad tracks (in Illinois, among other places) and theorized that, carried by railways and wind, the plant could become a severe problem. Dewey recommended that rail companies get rid of the plant wherever they found it growing. Today, millions of dollars are spent each year to eradicate it, especially along highway right-of-ways. It can rapidly take over open land via up to 200,000 seeds per plant.

There are many *Salsola* species; botanists aren't sure of the exact number. Complicating matters further, some plants in the genus, including *S. kali*, were reassigned to a new genus, *Kali*, in 2007; the USDA, however, still refers to the species discussed here as *S. kali* or *S. kali* spp. *tragus*. Other edible species include *S. kali* var. *pontica*, *S. australis*, *S. komarovi*, and *S. soda*.

We know a few details about the plant's nutritional value from animal-feeding studies. It is speculated to be high in vitamin A, but exactly how high is uncertain. A 100-gram serving of leaves has 12 grams of protein, 24 mg of calcium, 22 mg of phosphorus, and 1000 mcg of beta-carotene. Overall, *S. kali* is reported to be 11.5% protein by weight and 12.4% fiber.

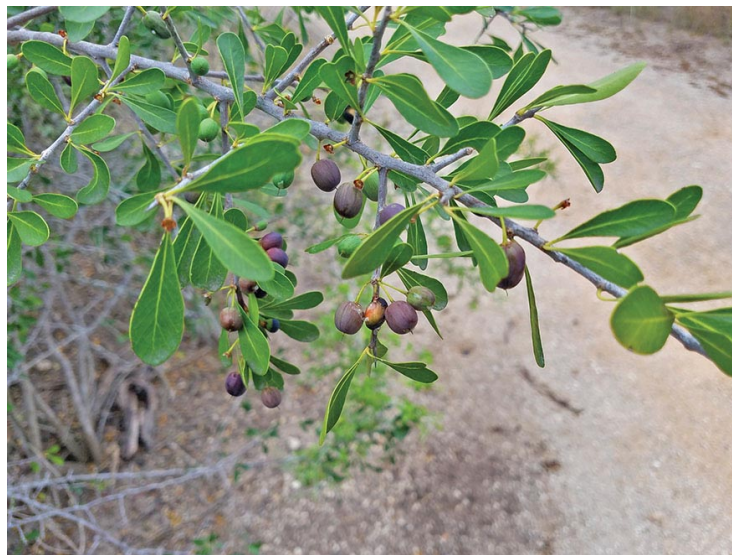
Saffron Plum

Sideroxylon celastrinum

NOTABLE NUTRIENTS OR USES No nutritional information available.

SAFETY NOTES See notes below regarding edibility.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Shrub or tree with thorny branches, produces a milky sap. Leaves alternate, narrow oblong or spatulate, 1 to 1.5 inches long, smooth, sometimes spine-tipped, often densely clustered along branches. Flowers tiny, white, fragrant, five-lobed, in axillary clusters (where stem and leaf meet). Fruit egg-shaped, .75 inch long, dark purple or black, contains a single seed.

TIME OF YEAR Almost year-round

RANGE Florida and Texas

ENVIRONMENT Hammocks inland

METHOD OF PREPARATION Ripe fruit raw

Green Deane's Notes

The saffron plum is neither yellow nor a plum. It's also called a buckthorn, but it isn't one of those, either. I learned the genus as *Bumelia*, but sometime between 1996 and 2004 it became *Sideroxylon* ... you just got to love botanists and their penchant for changing plant names.

Whatever you call the genus, it sits on the cusp of edibility: Some *Sideroxylon* species have barely edible fruit, while the fruit of other species falls just on the inedible side. *Sideroxylon celastrinum* has the largest and best-tasting berries—but don't eat their seeds. Saffron plums are anti-inflammatory, like all fruit from *Sideroxylon* plants.

A saffron plum relative, *Sideroxylon dulcificum*, produces fruit called the Miracle Berry: For about a half an hour after eating them, you cannot taste anything sour. A lemon would taste sweet. The Miracle Berry also counters the metallic taste some experience while undergoing chemotherapy. The fruit's ability to alter taste perception was noted as early as 1725, but its mechanism is not known; one theory is that it temporarily alters the physical shape of the taste receptors on the tongue. Other *Sideroxylon* that are edible, or at least chewable, include *S. lanuginosum*, *S. lyciodes*, *S. reclinatum*, and *S. tenax*.

Sandspur (Sandbur)

Cenchrus spp.

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES Beware possible fungus infection on plant—it can look like black grains of rice.

NATIVE STATUS Native



IDENTIFICATION Annual grass with stem tips from lower nodes that bend and root. Seed heads are spiny burs 1–5 inches long, up to a half inch wide. Spines either flattened and spread over body of bur or fine bristles that ring around base of bur.

TIME OF YEAR Year-round in warm areas, summer and fall in northern areas

RANGE Throughout North America

ENVIRONMENT Usually in dry ground. *C. echinatus* grows in turf, cultivated and disturbed areas.

METHOD OF PREPARATION Grain winnowed, then parched, cooked, or made into porridge or flour

Green Deane's Notes

If I were ever to invent a torture, it would be dragging someone naked through a field of sandspurs. This is one of those wild edibles that find you, usually by getting in a shoe or grabbing onto your clothes. When I'm going out in grassy, sandy areas, I always take with me a small pair of needle-nosed pliers to remove them.

My uncle Wray Putney was a professional when it came to lawn maintenance on a grand scale. But as with the case with many professionals, he never maintained his own lawn. His sandy acre grew nothing but sandspurs—big, mean, ugly ones that reached out and impaled you.

I got my revenge, however, because all sandspurs—also called sandburs—are edible. Once winnowed, the seeds can be used like any grain: parched or to make bread, porridge, even a beer-like drink. The only issue is how to get at the seeds. By far the quickest and easiest way is to burn the spines off in a fire using the stalk as a handle, kind of a semi-roasting. Eat the seeds and hulls then and there (you may get a little charcoal in the taste). You want to

just singe off the spurs; don't let them catch on fire because the plant will quickly burn to a crisp because of its high oil content.

Alternately, you can burn off the spines, pound the burned hulls in a mortar, and winnow to get clean seeds. Or you could do the same pounding and winnowing with raw (unburned) seeds. Another way is to rub the sandburs between two sturdy pieces of leather, which will separate the seeds from the spines.

Sassafras

Sassafras albidum

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES See below for safety notes.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Shrub or small, scraggly tree. Twigs slender, green, possibly hairy, spicy-sweet aroma. Leaves 3 to 6 inches long with up to three lobes (two-lobed resembles a mitten, three-lobed, a trident), fragrant and smell like root beer when crushed. Small showy yellow flower. Fruit shiny, dark-blue ovoid in red cup attached to red stalks.

TIME OF YEAR Available year-round; if climate allows

RANGE All over North America

ENVIRONMENT Dry sandy spots, full sun to some shade. Here in Florida it likes to grow like a persimmon, along the edges of woods, fields, and roads.

METHOD OF PREPARATION Leaves, roots, or bark for tea; dried leaves ground for filé

Green Deane's Notes

Bet your sweet sassafras! If you're on the young side, ask anyone not on the young side: Root beer used to taste a lot better, didn't it? Nowadays the root beer flavor is concocted from "artificial ingredients" and tastes like bubble gum, but it used to be made from sassafras. If you tear or crush sassafras leaves, they smell like root beer.

That stopped some 60 years ago after lab rats got liver tumors when they were force-fed safrole, oil from the sassafras tree. That people didn't get ill from drinking root beer was irrelevant. Safrole was ordered off the market in the US.

This was a problem in Louisiana because one can't have filé gumbo without filé, and filé comes from sassafras leaves. A compromise was reached: Sassafras leaves have very little or no safrole in them, so filé was allowed. But nearly all other commercial food uses of the tree were out. Filé, by the way, is a powder that you can make by pulverizing dried sassafras leaves. It is sprinkled on top of gumbo for flavoring.

In all fairness, safrole is a potent oil (also found in Yellow Anise and camphor trees). It was used to induce abortions—perhaps that's why research was conducted on it in the first place. Several thousand tons of safrole are produced yearly outside the United States, in China and Brazil. Distilled safrole is used in manufacturing perfume and insecticide and, illegally, the drug Ecstasy—a main reason it was banned. Another reason: In high doses, safrole is hallucinogenic.

You can make tea from sassafras leaves by putting a handful of them in a cup, pouring boiling water over them, letting them steep for 10-12 minutes in boiling water, and then straining out the leaves. The roots of a young

sapling make a better tea. You also can make a great jelly with the roots; follow the recipe that comes with a package of Sure-Jell pectin.

Pre–World War I research reportedly showed that people who drank sassafras tea had fewer throat infections and colds than the general population. The tree’s deep-blue berries are inedible to humans but are eaten by dozens of bird species as well as bears. Sassafras is unusual among trees for having differently shaped—actually, differently lobed—leaves on the same tree. Sassafras trees can live to 1,000 years old and have no natural enemies.

Sassafras was one of the first exports from the New World to Europe; explorers were sailing to the Americas for it as early as 1584,. Two ships left England for North America in 1603 with the singular purpose of bringing home sassafras. By 1610, the plant was so prized that providing sassafras oil was one of the conditions of the Virginia Charter. The wood is heavy, strong, and aromatic and was used in boat and bed building. The bark can yield an orange dye, and the oil has been used as an antiseptic and a painkiller.

Incidentally, root beer was originally called “root tea” by its inventor, Charles Hires. A friend suggested he would do better if he called it “root beer.” Hires, a pharmacist, was on his honeymoon when he came up with the formula for root beer. I’m not sure what that said about his marriage.

Sawgrass

Cladium jamaicense

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES The plant is quite sharp, so be careful when harvesting.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Tall, coarse perennial, usually 3 feet high but up to 9 feet. Leaves long, thin, flat V-shaped blades with sharp teeth on edges and underside. Flowers rusty brown spikes up to 3 feet long above leaves.

TIME OF YEAR Year-round where warm, summer and fall elsewhere

RANGE North America except the northern Plains

ENVIRONMENT Edges of wetlands or freshwater lakes; near or above springs

METHOD OF PREPARATION Inner bottom of stalk raw or cooked

Green Deane's Notes

In a state park near where I live in Florida, there is a high and dry stretch of scrub pine, palmetto bushes, and, oddly, a bunch of sawgrass. This karst area is dotted with large and small springs. Sawgrass in that dry environment is the only indication of the spring underneath; normally it is found in standing water.

Sawgrass is correctly and incorrectly named. It is not a grass but a sedge. Sedges have edges, grasses have stems. And on sawgrass those edges are finely sawtoothed. So the “saw” name is correct: The plant is very sharp and will cut you quite easily. In Haiti it is called the “razor herb.” Sawgrass can serve as a blade in nature if you need one.

Apparently most animals avoid sawgrass. Part of it is edible, though not easy to get at. The white core inside a stalk at the bottom—the heart of the leaves—can be eaten raw or roasted/boiled. It tastes similar to heart of palm but not as sweet. Just remember to handle the plant carefully. Some say the young shoots are edible, but I don't see how, and the roots are too tough to eat as well. Sawgrass can lead you to another source of food: The top often has little worms in it that are excellent bait for freshwater fish. You might find these worms at the top of bulrushes and cattails too.

Saw Palmetto

Serenoa repens

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, calcium, sodium

SAFETY NOTES Berries are definitely an acquired taste. See below. Also, rattlesnakes are often found on/near saw palmetto, so use caution! Stem edges are covered in fine teeth that can cut you easily. When pulling on one stem, it's not hard to accidentally ignore the others and cut yourself badly. Be aware!

NATIVE STATUS Native



Nutrition Notes

Heart of palm, per 100 grams

115 calories, 0 g fat, 25.61 g carbohydrates, 2.7 g protein, 1.5 g fiber

Vitamin A	68 IU
Vitamin B1 (thiamine)	0.05 mg
Vitamin B2 (riboflavin)	0.18 mg
Vitamin B3 (niacin)	0.9 mg

Vitamin B6 (pyridoxine)	0.81 mg
Vitamin B9 (folic acid)	24 mcg
Vitamin C	8 mg
Vitamin E	0.5 mg
Calcium	18 mg
Copper	0.64 mg
Magnesium	10 mg
Phosphorus	140 mg
Potassium	1806 mg
Selenium	0.7 mcg
Sodium	14 mg
Zinc	3.73 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Small tree, 6 to 12 feet, sprawling, grows in clumps or dense thickets. Leaves (fronds) yellow-green or blue-green on stalks covered with saw-like teeth. Numerous cream-to-yellow fragrant flowers, which turn into a hard green fruit that turns gold in color, then black. Large seed similar to an olive pit. Small white flowers. Berries are black when ripe; seeds brown.

TIME OF YEAR Fruits ripen in fall, heart available year-round.

RANGE Southeast and Texas

ENVIRONMENT Sandy ridges, flatwood forests, coastal dunes, islands near marshes, hardwood hammocks

METHOD OF PREPARATION Hearts of palm raw or cooked, crown end of growing leaves as trailside nibble, fruit raw or dried, seeds raw or cooked

Green Deane's Notes

Saw palmetto berries can taste like vomit. I've only known one person who liked them when trying them for the first time. They were described in 1696 as tasting like rotten cheese in tobacco juice. The modern palate might describe them as a strong blue cheese with a lot of hot pepper tossed in ...

or the flavor in your mouth when you burp up heartburn. I eat one berry at a time, with wine, and still it is very intense. They're not something to eat without a chaser.

Fortunately, there is more to forage off the saw palmetto than the berries. The terminal buds of growing trunks contain hearts of palm—similar to but smaller than those from the cabbage palm. They do not taste like cabbage; they're more like artichoke. Taking hearts of palm from a saw palmetto does not kill the many-trunked plant. You can eat them raw or boiled.

The growing bottom ends of young fronds are also edible, after one carefully pulls them out. You get one or two bites off those, but it is work hauling them out. Put on leather gloves, grab the youngest stalk firmly, and yank—where it breaks is edible. Stems from the plant can be made into an edible starch by chopping and grinding them, mixing with water, straining, and allowing to settle. The seeds are edible raw or roasted but (like the berries) are an acquired taste.

I once processed 10 pounds of berries: Five pounds were dehydrated, and five went into vodka for infusing. The dried berries had a milder flavor. The ones in vodka moderated, too, but took on a tougher skin texture. The Seminole said you shouldn't eat more than five palmetto berries at once, and if you eat them with hot water they will bother your mouth for a while. They still squeeze the berries, add a little sugar to the juice, and drink it. In the early 1900s in Miami, you could buy Metto, which was saw palmetto juice mixed with sugar and carbonated water.

The saw palmetto is a major source of honey, and its leaves produce wax. Besides that, the plant is used for fiber and thatching. The stems provide a good cork substitute, and the root makes a natural scrub brush. Saw palmetto berries have several medical applications, including possibly for the male reproductive system.

If you do forage for the berries, proceed carefully, as palmetto thickets are a favorite place for the Eastern diamondback rattlesnake, not only on the ground but in the fronds. The snake often climbs the plant on sunny days to get off the hot ground and enjoy the shade. Creatures that like to eat the berries include raccoons, foxes, black bears, gopher tortoises, white-tailed deer, feral hogs, and aquatic birds.

Seablite

Suaeda spp.

NOTABLE NUTRIENTS OR USES Calcium, beta-carotene, fiber, protein

SAFETY NOTES No known safety issues

NATIVE STATUS Native and/or introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION *Suaeda maritima*, bushy, often low-growing coastal annual dotting higher parts of the beach; can grow in gravel and sand, among rocks, and around boulders. Leaves long, narrow or almost cylindrical, pointed, fleshy, sprucelike. Flowers pale green or yellow-green, five-lobed, found at leaf axils. *S. linearis*, an annual or perennial up to 3 feet tall, is branched, succulent, stems light green to almost white, leaves narrow, pointed, triangle-shaped, almost fleshy, up to 2 inches long; flowers red or pink, five-lobed. Seeds for both species glossy, black, small

TIME OF YEAR Flowers, August to October (*S. maritima*) or August to September (*S. linearis*); seeds, September to October

RANGE *S. maritima*, Virginia north to eastern Canada, two western counties in Florida, one northern county in Washington State, southern Alaska, and Manitoba; *S. linearis*, Texas Gulf Coast to Maine

ENVIRONMENT Salt marshes, beaches, dunes

METHOD OF PREPARATION *S. maritima*, steamed (young shoots); *S. linearis*, raw or boiled (leaves and stems); seeds can be ground into mush or used to make bread.



Nutrition Notes: *S. maritima*

Young shoots, per 100 grams

4.59 calories, 0.15% fat, 2.18% carbohydrates, 3.46% protein, 6.21% fiber (4.78% insoluble, 1.43% soluble)

Vitamin C	0.02 mg
Calcium	2417 mg
Beta-carotone	3540 mcg

Green Deane's Notes

A lot of wild forageables are acquired tastes. Fortunately, seablites such as *S. linearis* (Southern Seablite) are excellent raw or cooked, both leaves and seeds. Young shoots of *S. maritima* (Annual Seablite) are the plant's prime edible, lightly steamed; overcooking can make them bitter. Seablites are a great treat starting around March.

In some parts of the US, plants in the *Suaeda* genus are common, and in others they're rare. In general, when *Suaeda* grows near the ocean, it's called seablite; when it grows inland near salty water or salt licks, it's called seepweed.

Other seablites and seepweeds include *S. californica* (California Seablite), which grows in four counties in California, and *S. calceoliformis* (Pursh Seepweed), which grows all over North America, except the Deep South, Iowa, and Vermont. Both can be eaten raw and cooked (young shoots and leaves).

Sea Lettuce

Ulva spp.

NOTABLE NUTRIENTS OR USES Magnesium, potassium, iodine

SAFETY NOTES Avoid any seaweed, *Ulva* or otherwise, that grows in water covered with blue-green algae, which can cause nausea/vomiting; skin, nose, or throat irritation; or breathing problems. Decomposing sea lettuce that washes ashore releases a toxic gas that smells like rotten eggs and is potentially deadly to both humans and animals.

NATIVE STATUS Native



Nutrition Notes: *U. lactuca*

Per 100 grams

128 calories, 0 g fat, 43 g carbohydrates, 14.3 g protein, 28 g fiber

Chromium	28 mcg
Copper	1.4 mg
Iodine	386 mcg
Iron	14 mg
Magnesium	1500 mg

Manganese	4 mg
Potassium	2800 mg
Sodium	3200 mg
Zinc	2.1 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Thin tufts or solitary blades (leaves) ranging from inches long to up to 3 feet, bright to dark green, ruffled or flat, very small teeth on edges, gold edges when reproducing. Some species look tattered when older, with holes in the blades.

TIME OF YEAR Generally year-round

RANGE All along the East and West Coasts

ENVIRONMENT Attached to rocks (when young) or free-floating (when older) in intertidal zone; as deep as 35 feet in calm, protected waters. Usually seen in dense colonies

METHOD OF PREPARATION Raw, cooked, dried, or toasted; best for soups and salads

Green Deane's Notes

Ulva, or sea lettuce, is the greenest seaweed you'll ever see. Ten species, all edible, are found around the world in cool water. In addition to intertidal zones, it favors areas of freshwater runoff, such as the mouths of rivers, streams, and runoff pipes. One common species, *Ulva lactula*, is often seen on jetties at low tide.

Rich in iodine, magnesium, and potassium, sea lettuce should be washed well before use; optionally, soak it in water for 2 hours to tone down its strong flavor. In addition to eating it raw or cooked in soups, salads, and stir-fries, you can also toast it over charcoal for added depth of flavor. Or, to make sea lettuce fritters, chop up about one cup, boil for about half an hour,

mix with a half cup each of grated cheese and oatmeal, shape into patties, and fry until done.

Sea lettuce also can be dried and used as a nutritious powder (in smoothies, for example). When the blades (leaves) are fully dried, they turn dark and brittle. Air-drying in the sun is best, though you can also use an oven (bake in a low oven around 150°F until dry). Sea lettuce can be stored for two or three days in the refrigerator or frozen for up to six months without loss of flavor.

Some species other than *Ulva lactuca*, known collectively as Green Nori, were formerly classified under the genus *Enteromorpha*. Sea lettuce's medicinal uses include treating burns and gout.

Seaoat

Uniola paniculata

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES See notes about legality of collecting.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial grass with creeping roots and stout stems, in dense clumps 3.5–8 feet high; leaves long, skinny, tapering, with slender tips curling like a ribbon; spikelets flat, oval, straw colored; clustered panicles 8–6 inches long, with flat, elongated seeds enclosed

TIME OF YEAR Nearly year-round

RANGE USDA Hardiness Zones 5–8 or 9

ENVIRONMENT Sandy beaches and dunes

METHOD OF PREPARATION Seeds can be cooked as cereal or ground and made into bread.

Green Deane's Notes

Seaoat is illegal to harvest in some areas. Why? It stabilizes sand dunes and traps windblown sands that eventually mound to begin dune formation. The plant does not build dunes on its own, however. Rather, seaoat holds replacement sand that humans use to build beaches after the original sand has washed away.

In the sense that beaches are always moving, seaoat is considered endangered, just as beach houses are, although it's not endangered in the scarcity sense. A good alternative to picking it illegally (where prohibited) is to buy some roots or seeds and grow your own—seaoat will flourish in your sunny backyard just as well as at the beach. It grows to about 8 feet high, is highly drought tolerant, and is quite showy.

Botanically, seaoat is known as *Uniola paniculata*. *U. palmeri*, now called *Chasmanthium latifolium*, is found inland in many US states. Seaoat is sometimes called *Chasmanthium paniculata*, but whether it's in the genus *Chasmanthium* or *Uniola* is a botanical tempest in a teapot.

Sea Oxeye

Borrichia frutescens

NOTABLE NUTRIENTS OR USES No nutritional information available; vitamin C

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Stems usually erect, sometimes decumbent or arching, leaves gray, obovate or elliptical to oblanceolate, bracts rigid and tipped with spines. Single flowering head on end of the main stem or branches, yellow ray flowers and brownish-yellow disc flowers. Each disc flower produces a dark-brownish-gray, indehiscent (closed), dried fruit and an achene (cone-shaped, with three to four angles, each tipped with a sharp tooth).

TIME OF YEAR Late spring and or summer

RANGE From Maryland to Florida on the East Coast, west to the Texas Gulf Coast, and inland along the Rio Grande Valley. Also found in the Florida Keys

ENVIRONMENT Salt marshes, along dunes, at the wrack line, and or in brackish locations

METHOD OF PREPARATION Leaves raw (usually with vinegar in a salad) or cooked as a potherb

Green Deane's Notes

When it comes to edible plants, there are those that sit on the cusp of edibility: edible but unpleasant, edible in small quantities, edible but with a strange texture, or edible but strong-flavored. That's where one finds *Borrichia frutescens*, aka Bushy Seaside Tansy, sea oxeye, Bushy Seaside Oxeye, and sea marigold, among many other names in several languages.

In his 909-page book *Florida Ethnobotany*, Professor Daniel Austin managed to scrape up about one page worth of information on *B. frutescens*. Among his findings, he notes that two species—*B. frutescens* and *B. arborescens*—have been much confused in botanical literature. Both were probably used the same way medicinally. The first medical reference to them is in the 1400s; uses included “boiling the leafy branches and taking the decoction for colds and coughs.”

The two species, both edible, are reasonably easy to tell apart. Both have bracts (leaf- or petal-like growths directly below the blossom): If the bracts are rigid and tipped with a spine, the plant in question is *B. frutescens*; if the bracts are soft and not tipped with a spine, the plant is *B. arborescens*. Also, *B. frutescens* has gray leaves, while *B. arborescens* has green leaves (in Florida; elsewhere, they can mix and match).

Sea Purslane

Sesuvium portulacastrum

NOTABLE NUTRIENTS OR USES Beta-carotene, vitamin C, vitamin K, magnesium

SAFETY NOTES Too much vitamin K can interfere with older classes of blood thinners (e.g. warfarin).

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Herbaceous perennial with thick, fleshy leaves, narrow to slender and obovate, on succulent, reddish-green stems, branching regularly and forming dense, low-growing stands. Five-petaled flowers small and showy pink; each flower opens for just a few hours each day, with leaves up to 1 inch long or more.

TIME OF YEAR Year-round

RANGE From the Texas Gulf Coast east and as far north as the Delaware River in Pennsylvania. An edible relative, *Sesuvium verrucosum*, is also found on the West Coast.

ENVIRONMENT On the ocean side of dunes to the high-tide mark



METHOD OF PREPARATION Raw, pickled, cooked

Nutrition Notes

Per 100 grams

22.3 calories, 0.024 g fat, 4.5 g carbohydrates, protein NA, 9.9 g fiber

Vitamin B1 (thiamine)	0.02 mg
Vitamin B2 (riboflavin)	0.06 mg
Vitamin B3 (niacin)	0.24 mg
Vitamin B5 (pantothenic acid)	0.17 mg
Vitamin B9 (folic acid)	17.4 mcg
Vitamin C	6.95 mg
Vitamin K	164 mg
Calcium	23 mg
Magnesium	49.7 mg
Phosphorus	33.4 mg
Sodium	808 mg
Beta-carotene	680 mcg

Green Deane's Notes

Sea purslane looks like purslane (see [page 232](#)) on steroids. I've seen it growing not only on beaches but also on the sandy shores of inland lakes many miles from the ocean—dropped by birds, perhaps. In any case, it's a

nice, salty trailside nibble that's very common and easy to identify. (*Sesuvium maritima* is very similar, but the leaves are no more than 1 inch long and are oblong to spatulate oblong.)

Sesuvium portulacastrum was widely used for food by Native Americans. These days, it's grown commercially and is often found in Asian markets.

Like seaot (see [page 249](#)), sea purslane forms an important and primary function in dune creation. Salt tolerant, it sets roots just above the high tide line. Sand-carrying wind hits the plant, slows slightly, and drops the sand it's carrying. That helps build the dune and, in time, brings in other plants.

Sea purslane cooks up nice and tender—just be sure to remove any old dead leaves first. While I don't find it overly salty, it does have a slightly bitter aftertaste when raw; cooked, it loses that distraction. (To reduce saltiness, cook in two changes of boiling water or more, about 5 minutes each.) The older stems can be fibrous, albeit tasty (if you find them too tough, you can always chew off the pulp and spit out the fiber). I also like to toss a young bunch on the grill when I'm done cooking everything else. I cover it and let it warm for about 5 minutes.

Searocket

Cakile spp.

NOTABLE NUTRIENTS OR USES Calcium, magnesium, potassium, vitamin C, fiber, oxalic acid

SAFETY NOTES Foods rich in oxalic acid, such as searocket and other leafy greens, should be consumed with caution by people who are susceptible to kidney stones.

NATIVE STATUS Native and/or introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION *Cakile edentula*, low, fleshy, branching beach plant with pale-lavender flowers, four petals about a third of an inch long, leaves lightly toothed or not; seedpods angular. *C. maritima*, leaves very deeply lobed, shiny, fleshy, green tinted with purple or magenta; flowers long-lobed, four-petaled, white or light purple; sculpted, segmented, corky brown fruits up to 1 inch long. *C. lanceolata*, long leaves toothed or not, or irregular but not deeply lobed; pods cylindrical; four-petaled flowers white or light purple

TIME OF YEAR Midspring to autumn, depending on climate

RANGE *C. eduntula*, along US coastlines, plus the Great Lakes; *C. lanceolata*, Texas to Florida coasts; *C. maritima*, West Coast, coastal Texas and Alabama, North Carolina to Long Island

ENVIRONMENT Above the high tide line of beaches, oceans, freshwater lakes, and rivers

METHOD OF PREPARATION Leaves and stems of all three species described can be eaten raw; leaves and stems of *C. edentula* and *C. lanceolata* are best for cooking; roots of *C. edentula* and *C. maritima* can be dried and ground into a flourlike powder.



Green Deane's Notes

Cakile species are perennials in the mustard family that can grow upright or spread out. They hug the coast, often in dunes. The white or purple flowers are rather similar to those of the wild radish—that is, the four petals have veins, whereas other mustards' petals do not. Therefore, identifying leaves and stems is the way to tell searockets apart. The leaves of all species have a peppery or mustard-like scent and taste.

If you're near big water, there is a searocket near you, and the differing species' ranges overlap. Though similar, not all searockets are used the same, so let's look at three individually.

Nutrition Notes: *C. maritima*

Leaves and stems, per 100 grams

82.2 calories, 1.93% fat, 12 g carbohydrates, 19.63% protein, 5.52% fiber

Vitamin C	178 mg
Calcium	19.8 mg
Copper	0.5 mg
Iron	4.52 mg
Magnesium	7.7 mg
Manganese	2.75 mg
Phosphorus	4.02 mg
Potassium	28.1 mg
Zinc	1.83 mg
Carotenoids	500 mcg
Oxalic acid	178 mg

Nutrition Notes: *C. maritima*

Roots, per 100 grams

77.5 calories, 0.9% fat, 3.28 g carbohydrates, 8.56% protein, 9.26% fiber

Vitamin C	178 mg
Calcium	26.53 mg
Copper	0.2 mg
Iron	1.13 mg
Magnesium	10.9 mg
Manganese	0.6 mg
Phosphorus	1.77 mg
Potassium	10.9 mg
Sodium	3.33 mg
Zinc	0.5 mg
Carotenoids	5 mg
Oxalic acid	178 mg

C. edentula: Leaves and young stems, raw or cooked. The younger leaves are used in salads, the older leaves are mixed with milder greens and used as a potherb. The flavor is similar to horseradish. The roots can be dried, ground, and mixed with flour to make bread.

C. maritima: A European import; leaves, stems, flower buds, and immature seedpods are best eaten raw. All can be cooked, although cooking makes them very bitter. The roots can also be dried and used similarly to *C. edentula*.

C. lanceolata: Leaves and stems can be eaten raw or cooked. Young shoots or tips are excellent.

Shepherd's Purse

Capsella bursa-pastoris

NOTABLE NUTRIENTS OR USES Vitamin C, potassium, calcium, phosphorus, chloride

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced



Nutrition Notes

Leaves, per 100 grams

33 calories, 0.5 g fat, 9 g carbohydrates, 3 g protein, 3.4 g fiber

Vitamin A	327 IU (98.1 mcg RE)
Vitamin B1 (thiamine)	0.25 mg
Vitamin B2 (riboflavin)	0.17 mg
Vitamin B3 (niacin)	0.4 mg
Vitamin C	63.5 mg
Calcium	235 mg
Chloride	80.6 mg
Copper	0.1 mg
Iron	4.8 mg

Magnesium	19.2 mg
Manganese	0.4 mg
Phosphorus	81 mg
Potassium	376 mg
Sodium	47 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Flowers white, four-petaled, two-stamened; fruit a heart-shaped seed; leaves lobed, toothed, long, lance-shaped; stems erect; seedpods flat, two-chambered around the stem (shape may vary); taproot vertical

TIME OF YEAR Spring and summer

RANGE Worldwide

ENVIRONMENT Well-drained soils (sandy to rich), old pastures, gardens, lawns, roadsides, nearly any sunny spot

METHOD OF PREPARATION Leaves raw or cooked as potherb, seeds ground for seasoning

Green Deane's Notes

I see shepherd's purse in winter starting in late November. It's very similar to peppergrass (see [page 220](#)), though it's much milder in flavor and the seeds are more heart-shaped than purse-shaped.

In addition to the nutritious leaves, shepherd's purse seeds contain (per 100 grams) 12.4 grams of protein, 22.6 grams of fat, 50.3 grams of carbohydrates, and 14.3 grams of fiber.

The leaves can be used raw in salads or sautéed/stir-fried, while the seeds can be ground and used as a pepper substitute. You can also use the flowers to flavor vinegar. Finally, you can grind the root and make a horseradish substitute with salt and vinegar, although it's a lot of work. Shepherd's

purse is grown commercially in Asia and is widely used in Chinese and Korean cooking.

Silverhead

Blutaparon vermiculare

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Succulent, creeping, prostrate herb with branches 1–6 feet long. Leaves opposite, spindly or club-shaped, from narrow to 0.4 inch wide, 0.5–1.5 inches long, thick, fleshy. Flowers silvery white, a dense round or oblong spike. Fruit oval, flat, dark brown, seed glossy

TIME OF YEAR Generally year-round

RANGE Primarily Florida but also the Texas and Louisiana Gulf Coasts

ENVIRONMENT Dunes, waste areas, inshore from mangrove thickets (Florida Keys and mainland Florida)

METHOD OF PREPARATION Stems and leaves raw or boiled

Green Deane's Notes

My first thought on seeing silverhead was, “What is clover doing growing on the beach?” From a distance, the blossoms do look like white clover, although they don’t resemble it close up.

Silverhead goes by several other common names, including samphire, saltweed, saltwort, Beach Carpet, Reef Banana, and silverweed. I’ve gone with silverhead here as it’s both descriptive and what the USDA uses. Botanically, it’s *Blutaparon vermiculare*, but it used to be called *Philoxerus vermicularis*.

Part of the amaranth family, *B. vermiculare* provides leaves and stems for cooking. (Consider them already-salted greens.) I nibble on it raw. Silverhead is commonly fed to chickens in warmer parts of the world.

Silverthorn

Elaeagnus spp.

NOTABLE NUTRIENTS OR USES Lycopene, vitamin C

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION *Elaeagnus pungens*, shrub 3–25 feet, leaves lance-shaped, evergreen, simple, or wavy-edged, 2–4 inches long. Upper leaf surface waxy green, often scaly. Lower leaf surface silvery and scaly with brown freckles. Leaves feel tough and grainy. Young branches thorny. Fruit red with gold- or silver-like flecks. The seed covering has longitudinal ridges.

TIME OF YEAR Blossoms in fall, fruits in early spring. *E. umbellata* generally fruits in late summer or fall.

RANGE North America and Asia

ENVIRONMENT Ideally, full sun and rich soil; can grow in partial shade and poor soil

METHOD OF PREPARATION Usually eaten out of hand. Can be used to make jam, jelly, fruit leather, or juice; can also be used to make tea or flavor yogurt. Seed kernel edible

Nutrition Notes

Per 100 grams

51 calories, 0.9 g fat, 2.8 g carbohydrates, 1.3 g protein, 0.5 g fiber

Vitamin A	34 IU (10 mcg RE)
Vitamin B1 (thiamine)	0.03 mg
Vitamin B2 (riboflavin)	0.05 mg
Vitamin B3 (niacin)	0.4 mg
Vitamin C	10 mg
Calcium	7 mg
Iron	0.4 mg
Phosphorus	20 mg
Lycopene	10.09–53.96 mg*

*Depending on species (red-pigmented fruit only)

Green Deane's Notes

When it comes to being the “champeen” of lycopene—a powerful antioxidant that fights inflammation and may protect against heart disease and certain cancers—it has to be the red fruit of a species in the *Elaeagnus* genus. *E. umbellata*, the autumn olive, contains 17 times as much lycopene as tomatoes, which are often considered the standard bearer for this nutrient. Yellow-fruited *Elaeagnus* has only trace amounts.

Other research shows the fruit also has a good amount of vitamin C (ascorbic acid). The edible, slightly bitter seed also contains linoleic acid (an omega-6 fatty acid), oleic acid, and stearic acid, all of which have been found to be beneficial to cardiovascular health.

One common *Elaeagnus* species where I live is *E. pungens*, also called Silverthorn, Thorny Olive, and Ugly Agnes. Silverthorn—an ornamental landscape plant often used for hedges and barriers—came from China and Japan to North America some 200 years ago in the early 1800s. Also edible are the fruits of *E. commutata*, which is native to North America; *E. multiflora*, native to China, Japan, and Korea; the climbing *E. philippensis*, native to the Philippines; and *E. latifolia*, native to India and Southeast Asia.

Elaeagnus fruit has numerous uses. It can be eaten out of hand, though it tends to be very tart if picked too early. It can easily be made into fruit leather, juice, jam, and jelly. You can freeze the juice and mix it into yogurt or use it to make a tea. The fruit can be dehydrated as well. As mentioned, several species have edible seeds; I usually just eat the kernel and toss away the hull.

Skunk Vine

Paederia foetida

NOTABLE NUTRIENTS OR USES Potassium, vitamin C, calcium, sodium, iron

SAFETY NOTES Avoid collecting Skunk Vine in places where it might be sprayed with pesticides, such as along railroads, roads, bike paths, or power lines.

NATIVE STATUS Introduced

Green Deane's Itemized Plant Profile

IDENTIFICATION Twining vine in the coffee family; at eye level, twines from lower right to upper left. Young stems green or purplish/reddish brown, almost hairless to densely hairy; mature stems yellowish brown to grayish, smooth, and shiny. Leaves opposite, occasionally in whorls of three, lanceolate to oval-shaped, abruptly tapering point, 2–4 inches long, hairy or nonhairy, hairy below or smooth above, or having tufts of hair on the underside in axils of major veins; conspicuous stipules obvate to heart-shaped, triangular, may or may not have two notches at top. Flowers small, grayish pink or lilac, in broad or long, curving clusters; petals join to form a corolla with five spreading lobes. Fruit round, shiny yellow to brown, persistent through winter; inside are two round, black seeds often dotted with white, needle-shaped crystals. Seeds of *P. cruddasiana* (Sewer Vine), a close cousin, are oval and flat with little wings.



Nutrition Notes

Per 100 grams

100 calories, 0.6 g fat, 9.6 g carbohydrates, 2.7 g protein, 8.74 g fiber

Vitamin C	271 mg
Calcium	200 mg
Iron	5 mg

Phosphorus	844 mg
Sodium	27 mg

TIME OF YEAR Year-round in warm climates

RANGE Native to Asia; now found in all southern United States, Hawaii, and as an escaped ornamental in warm parts of the world; *P. cruddasiana* found only in Dade and Broward Counties in South Florida

ENVIRONMENT Disturbed areas, tree gaps; may grow high into trees, creating dense canopies in a variety of habitats, from mesic hummocks to xeric sandhill communities; prefers sunny floodplains and bottomlands but can also grow underwater

METHOD OF PREPARATION Leaves raw, cooked, or steamed. To my knowledge, *P. cruddasiana* is not edible.

Green Deane's Notes

Nearly everyone but me agrees that Skunk Vine smells awful when the leaves are crushed or bruised. The Japanese call it “human gas vine,” while the Chinese call it “chicken excrement vine.” I’m not convinced that these names are deserved, though—to me, raw *P. foetida* smells and tastes similar to raw broccoli. Indeed, both plants get their aromas from sulfur compounds, *P. foetida* specifically from carbon disulfide.

Paederia foetida was imported from Asia by the USDA to its Brooksville Field Station in Hernando County, Florida, before 1897. The reason given was that it was a potential source of fiber (as in twine). By 1916, however, *P. foetida* had become a local nuisance, and by 1933 Skunk Vine was escaping the region via all points north, east, and south. In 1977 it was recognized as an economically problematic invasive plant.

Skunk Vine can be used to make soups and is good minced and steamed. The odor goes away on cooking, but a slight bitterness remains.

Long used in Indian folk medicine for aches and pains, a 2004 study in Bangladesh showed it has analgesic properties. *P. foetida* contains nonanoic acid, capric acid, lauric acid, myristic acid, arachidic acid, palmitic acid, conjugated dienoic acid, and trieonic acid; these fatty acids variously have antibacterial, antifungal, and antioxidant properties. I've also found some references (but not actual studies) saying Skunk Vine contains beta-carotene, vitamins D and E, and zinc. A 2005 study also showed it was good for the symptoms of diarrhea. The leaf juice mixed with garlic is a folk remedy for arthritis; juice of the root is also given for indigestion.

Smartweed

Polygonum spp.

NOTABLE NUTRIENTS OR USES Phosphorus, potassium, calcium, magnesium

SAFETY NOTES Be careful when handling smartweed—the same chemicals that make it spicy can cause contact dermatitis. Species such as *P. hydropiper* and *P. cuspidatum* also contain chemicals that act like estrogen and should be consumed with caution by pregnant women.

NATIVE STATUS Native and/or introduced



Nutrition Notes: *P. pensylvanicum*

Per 100 grams

calories NA, 0.5 g fat, carbohydrates NA, 1.3 g protein, 2.6 g fiber

Vitamin B2 (riboflavin) 0.4 mg

Calcium 122 mg

Copper	0.2 mg
Iron	3.1 mg
Magnesium	95.6 mg
Manganese	1.7 mg
Phosphorus	467 mg
Potassium	322 mg
Sodium	3.2 mg
Zinc	0.5 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Polygonum pensylvanicum* (aka *Persicaria pensylvanica*) reaches half a foot tall. Stems ribbed, sometimes branching; leaves lance-shaped to an inch long, can have dark splotches. Flowers pinkish, small, reminiscent of plump rice grains. *Polygonum punctatum*, alternate leaves smooth-edged, lance-shaped, willow-like, 1–6 inches long, leaf base forms sheath around stem. Young leaves flat; older leaves can be wavy. Stems often reddish, flowers small, pink or white, in dense clusters from leaf joints or stem apices. Can grow to 4 feet tall or more but usually smaller.

TIME OF YEAR Year-round in warm areas, seasonal elsewhere, blooms July to first frost

RANGE Throughout North America

ENVIRONMENT Moist areas, around fresh water, ditches

METHOD OF PREPARATION Mature leaves and stems chopped and used sparingly like pepper, leaves and stems boiled in soups, again sparingly. Seedlings of *P. hydropiperoides* can be used like radish sprouts to give dishes a hot-and-spicy flavor. Seeds of some species are also edible.

Green Deane's Notes

When it comes to smartweed, all it takes is one quick taste to know if you've got the right plant: If it isn't extremely peppery, you picked wrong.

The burn takes a few seconds to kick in and then intensifies—and about the time you wish it would stop, it just gets hotter. Word to the wise: Use sparingly and try only a very small piece to start with. I find the blossoms bitter as well as hot.

Smartweed is in the buckwheat family, but you wouldn't want to use it in pancakes—it's for seasoning, soups, and perhaps salads. It's OK as a spice, a bit much as a potherb. Again, use it sparingly, or it can overwhelm like cayenne pepper.

In addition to the nutrients noted in the box for *P. pennsylvanicum*, (aka Pennsylvania Smartweed), *P. hydropiperoides* (Swamp Smartweed) contains antioxidants such as tannins, rutin, quercetin, and kaempferol (which have anti-inflammatory and heart-protective benefits), along with some protein. *Polygonum* species have diuretic, anticoagulant, and antifungal properties and have been used to stop intestinal and uterine bleeding and treat hemorrhoids (which is difficult to believe given its peppery taste); *P. hydropiper* (water pepper) and *P. cuspidatum* (Japanese knotweed) have also been used in Indian and Chinese herbal medicine to hasten menstruation and prevent pregnancy. I've never found any research regarding the specific chemical(s) that make *Polygonum* species peppery, although they may be substances similar to capsaicin.

Smilax

Smilax spp.

NOTABLE NUTRIENTS OR USES Vitamin E, fiber, calcium, potassium, magnesium

SAFETY NOTES Eat the tips and shoots sparingly when they're raw—eating a lot may give you a stomachache; this isn't due to toxicity but rather the high fiber content. Smilax looks vaguely similar to Virginia creeper, which *is* toxic. Virginia creeper has leaves that are directly opposite each other on the stems; smilax leaves are alternate, or staggered.

NATIVE STATUS Native and/or introduced



Nutrition Notes: *S. aspera*

Leaves and shoots, per 100 grams

100 calories, 0.95 g fat, 9.92 g carbohydrates, 3.5 g protein, 18.8 g fiber

Vitamin E	29.1 mg
Calcium	353 mg
Iron	1.66 mg
Magnesium	61.2 mg

Manganese	0.55 mg
Potassium	180 mg
Zinc	213 mg
Beta-tocopherol	4.5 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Climbing shrub with tuberous, knobby white roots tinged with pink; stems bamboo-like, thorny; leaves alternate, shiny/waxy, evergreen, wide variety of shapes depending on species; flowers tiny, yellowish green, five-petaled; fruit round, green turning to black, one small brown seed

TIME OF YEAR Starts putting out shoots in spring. Seeds germinate best after a freeze.

RANGE Eastern, central, and southern US

ENVIRONMENT Grows best in moist woodlands but can tolerate drier environments and is often seen climbing trees. Left on its own with nothing to climb, it sometimes creates a brambly shrub.

METHOD OF PREPARATION Roots cooked; young shoots and leaves cooked or in small quantities raw or lactofermented; berries eaten out of hand, cooked, or dehydrated

Green Deane's Notes

Smilax is a favorite of spring foragers. To harvest it, go back a foot or so from the end of the vine (more if the vine is very large, less if it's small) and see if the vine snaps, or breaks cleanly between your fingers; if not, move closer to the growing end of the vine and try again. The part where the vine snaps is the part you can take and eat. Bullbriers (*S. rotundifolia*) can produce edible shoots a foot long and third of an inch through. When

harvesting, watch out for the sharp thorns on the vine. (Just for the record, smilax is technically a climbing shrub rather than a true vine.)

When it comes to humans, the roots (actually rhizomes) of several native species are perhaps most famous as a flavoring in the root beer–like drink sarsaparilla. The roots can also be ground into a dry, reddish powder and used as a thickener (like cornstarch) or combined with flour to make bread. You may not find this worth the effort, though, as 10 pounds of roots yields just 1 pound of usable root powder. Young roots—finger-size or smaller—can also be cooked in soups or stews or boiled as a starchy side dish.

The tips, shoots, and leaves are best in the spring; when harvested in warmer weather, they can taste bitter or peppery, but cooking improves the flavor. The tips and shoots are somewhat reminiscent of asparagus or green beans when it comes to looks and texture, but they’re very much their own thing flavor-wise. The best-tasting berries are black ones that look like raisins; you can also dehydrate fruit that is ripe and plump. Some species have bright-red fruit, but I can’t report on the edibility of those berries in North America. One species, found on Crete, *S. aspera*, has red berries that are edible.

An estimated 300-plus species in the genus *Smilax* are found in the United States and Canada east of the Rockies; 14 species are found in the southern US. We have the nutritional content for the leaves and shoots of *S. aspera* (see box), aka Mediterranean Smilax, which is native to Mediterranean Europe, northern and central Africa, the Middle East, and India. The fruit of *S. herbacea* (Smooth Herbaceous Greenbrier), a native of the eastern US, has 8.3 grams of protein, 4 grams of fat, and 6.4 grams of fiber per 100 grams. Curiously, several species have tested *negative* for vitamin C.

Soapberry and Buffaloberry

Shepherdia spp.

NOTABLE NUTRIENTS OR USES Vitamin C, phosphorus, calcium, zinc, copper

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION *Shepherdia argentea* (Silver Buffaloberry), deciduous shrub to small tree 20 feet tall, dense silvery surface on the bottom of leaves and young twigs. Older branches commonly tipped with a spine, leaves wedgelike or oblong, no teeth. Flowers small, inconspicuous, in clusters in the leaf axils; fruits are scarlet.

S. canadensis (soapberry), deciduous shrub under 6 feet, oval to lance-shaped leaves, smooth edges. Bottom of leaves and twigs rust-colored; flowers small, green, inconspicuous, bloom in early spring; berries single or in clusters in leaf axils, orange to deep red, covered with small dots.

Nutrition Notes: *S. canadensis*

Per 100 grams

80 calories, 0.7 g fat, 16.6 g carbohydrates, 0.7 g protein, 5.3 g fiber

Vitamin A	3240 IU (970 mcg RE)
Vitamin B1 (thiamine)	0.03 mg
Vitamin B2 (riboflavin)	0.1 mg
Vitamin B3 (niacin)	0.2 mg
Vitamin C	165.6 mg
Calcium	16 mg
Copper	2 mg
Iron	0.5 mg
Magnesium	8 mg
Manganese	0.2 mg
Phosphorus	21 mg
Sodium	0.5 mg
Zinc	1.4 mg
Strontium	70 mcg

S. rotundifolia (Roundleaf Buffaloberry), evergreen (unlike its relatives); leaves silvery, round to lance-shaped, tightly packed, woolly below, with scruffy, rough-textured, oval, grayish-red berries

TIME OF YEAR *S. canadensis*, July to early August; *S. argentea*, fall, usually after a frost; *S. rotundifolia*, late summer

RANGE *S. argentea*, western two-thirds of North America, excluding Texas to Maine and southeast. (Oddly, it's also found in one eastern county of New York—an escapee, perhaps.) *S. canadensis*, all of Canada, the western third of the US (including Alaska), and the states north and east of Illinois, less commonly in Pennsylvania and Vermont. *S. rotundifolia*, northern Arizona and southern Utah only

ENVIRONMENT Open woods, thickets, rocks, shores

METHOD OF PREPARATION Eaten raw, cooked, or dried. Can also be made into a juice, jam, or jelly or used as a flavoring

Green Deane's Notes

There are only three species in the genus *Shepherdia*, all in North America. Some three dozen Indigenous groups depended on it as a food source. They dried, smoked, and pressed the tart fruit into cakes; they also whipped it into a foam and added sugar to make something akin to whipped cream. The foam of *S. canadensis* is derived from saponins, hence the common name soapberry; the common name buffaloberry (*S. argentea* and *S. rotundifolia*) supposedly refers to Western pioneers using it in a sauce to flavor cooked buffalo meat.

Society Garlic

Tulbaghia violacea

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, calcium, sulfur, quercetin

SAFETY NOTES While regular garlic is toxic to cats and dogs, Society Garlic is not. Most animals are repelled by it, but it could cause mild stomach upset in pets that do eat it.

NATIVE STATUS Native to South Africa; grown primarily as an ornamental plant in the US but also occurs in the wild



Green Deane's Itemized Plant Profile

IDENTIFICATION Fast-growing, drought-resistant, bulbous plant about 2 feet tall. Leaves long, narrow, straplike, slightly fleshy. Fat, tuberous roots (which are reportedly edible) spread to form clumps of plants. Pink-to-purple, tubular blooms clustered into umbels of up to 20 flowers on stalks above the leaves. Triangular capsules eventually replace the flowers and are grouped into a head. When ripe, the capsules split to release flattened, hard, black seeds.

TIME OF YEAR Summer, or year-round in warm climates

RANGE USDA Hardiness Zones 7–10 or 11

ENVIRONMENT Moist soils, sunny or partial shade

METHOD OF PREPARATION Leaves and flowers raw or cooked

Nutrition Notes	
Per 100 grams	
calories NA, fat NA, carbohydrates NA, protein NA, fiber NA	
Calcium	14 mg
Copper	0.31 mg
Iron	0.8 mg
Magnesium	3.5 mg
Manganese	0.3 mg
Phosphorus	30 mg
Potassium	45 mg
Sodium	3 mg
Zinc	0.26 mg
Boron	0.35 mg
Molybdenum	0.01 mg

Green Deane’s Notes

Any plant that looks *and* smells like garlic or onions is edible. Society Garlic meets these criteria: The leaves smell strongly of garlic when bruised and the flowers smell of garlic when picked.

Although it’s a popular ornamental, we also encounter this species regularly in my foraging classes. It’s called Society Garlic because settlers in South Africa thought it was a more breath-friendly spice to use for flavoring dishes than regular garlic, but in fact its garlicky taste is very long-lasting and intense—its aroma even repels insects, rabbits, cats, and dogs. I actually warn my students that if they don’t like garlic, they shouldn’t handle or taste this plant.

The slightly peppery leaves can be used like garlic in salads and other dishes. The flowers are milder—peppery-sweet and onion-like. Medicinally, the crushed leaves have been used to treat sinus headaches; the fresh bulbs (which are also reportedly edible) can be boiled in water and the decoction taken orally to clear up colds and coughs. They have also been used to treat tuberculosis and intestinal worms.

There has been a good amount of research on the species from a medicinal standpoint, and from there we can extract some nutritional data (see box). Our noses also tell us that Society Garlic contains sulfur compounds, which benefit joints and have been shown to protect against cancer and inflammation. Other research says it has flavonoids, including quercetin, as well as antibacterial and antifungal properties similar to those of garlic (*Allium sativum*).

A native of South Africa, Society Garlic is a favored food and medicine of the Zulu people. A second species, *Tulbaghia alliacea*, aka Isikhwa or wild garlic, is used in a similar fashion. There are at least two commercial cultivars, ‘John Rider’ and ‘Silver Lace,’ the latter distinguished by a white stripe on each side of the leaf. A 2011 study on African plants as potential food sources lists three *Tulbaghia* species—*T. violacea*, *T. alliacea*, and *T. capensis*—but specifies only uses for their leaves, not the roots.

Sorrel

Rumex spp.

NOTABLE NUTRIENTS OR USES Calcium, iron, phosphorus, vitamin A, vitamin C

SAFETY NOTES Like all plants with oxalic acid, it should be consumed in moderation, or more accurately, nothing in the extreme. Some people may be allergic. These plants bioaccumulate toxins, so be sure to avoid collecting from polluted spots. Because of the wide variety of species that exist, confirm your identification carefully.

NATIVE STATUS Native and/or introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Species vary, but a small-to-midsize perennial herb with white-to-greenish flowers on a long stalk. Young leaves shaped like a fat sword with a hilt; older leaves long and lance-shaped, edges wavy. *Rumex acetosella*, to 18 inches high, often growing in mats. Rosette of basal

leaves; slender stalks with reddish ridges, branching at top; flowers red (female) or yellowish green (male), turn into red, capsule-shaped fruits, each with one seed. *R. hastatulus*, up to 2 feet tall, has taproot, intensely green leaves, flowers that change from white to red, winged seedpods. It is a winter annual in Florida. The genus exhibits great variety, so your local *Rumex* may look very different. Confirm your identification carefully.

Nutrition Notes: *R. acetosella*

Per 100 grams

43 calories, 0.6 g fat, 9.6 g carbohydrates, 1.1 g protein, 1.1 g fiber

Vitamin A	560 RE
Vitamin B1 (thiamine)	0.02 mg
Vitamin B2 (riboflavin)	0.12 mg
Vitamin B3 (niacin)	0.4 mg
Vitamin C	33.5 mg
Calcium	57 mg
Copper	1.2 mg
Iron	2.3 mg
Magnesium	31 mg
Manganese	0.9 mg
Phosphorus	45 mg
Sodium	2.3 mg
Zinc	1.2 mg

Nutrition Notes: *R. arcticus*

Per 100 grams

42 calories, 0.7 g fat, 6.5 g carbohydrates, 2.3 g protein, 4 g fiber

Vitamin A	11900 IU
Vitamin B1 (thiamine)	0.09 mg
Vitamin B2 (riboflavin)	0.54 mg
Vitamin B3 (niacin)	1.1 mg
Vitamin C	68 mg
Calcium	2 mg
Phosphorus	55 mg

TIME OF YEAR Usually spring to fall in northern areas, fall to spring in warmer climates

RANGE Nationwide from New Mexico and Montana east

ENVIRONMENT Old pastures, roadsides, sandy areas, waste sites, ditches, disturbed areas; can tolerate dry conditions

METHOD OF PREPARATION Leaves raw or cooked. If you cook any *Rumex*, it's best to use a glass or ceramic pot.

Green Deane's Notes

The difference between sorrels and docks—which together make up the genus *Rumex*—can be foggy. Those that taste sour or tart tend to be called sorrels; the more bitter species are grouped with the docks (see [page 114](#)).

There are some 200 species in the *Rumex* genus. Of all the *Rumex* that grow regionally, *R. hastatulus* is probably the most pleasing. The tart-tasting, intensely green leaves are hard to misidentify—edible wise—and the bloom that turns from white to red is pleasing to the eye. Its nickname is the Heartwing Sorrel, describing the mature reddish, winged seed pods. Because of the leaf shape though, *R. hastatulus* is sometimes confused with the also edible *Rumex acetosella*. There are at least six cultivars of *R. acetosa*: Belleville, Blonde de Lyon, Larghe Foglie Bionde, Low Oxalic Acid, Nobel and Profusion. *Rumex pulcher*, a native of Europe found through much of the east of the United States west to Texas. Look for its hairy stems. Its leaves and seeds are edible.

Rumex have long been used in salads and as a potherb. I think they are a great stuffing for that fish you just caught. However, they're best known in a sorrel soup made by the French.

Every book on wild foods warns us not to consume too much oxalic acid. It is true that folks with kidney stones, gout, and the like should not

overconsume oxalic acid. But when was the last time you read or heard of such a warning for tea, parsley, rhubarb, carambolas, spinach, chard, beets, cocoa, chocolate, nuts, berries, black pepper, and beans? They all have oxalic acid, as well, often in higher amounts, but no dire warnings are given with them. As my Greek ancestors used to say some 3,000 years ago, μέτρον ἄριστον, [ME-tron A-ri-ston] all things in moderation.

Sourwood

Oxydendrum arboreum

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES Avoid consuming leaves; they are a laxative.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Deciduous, medium-tall tree growing to 30–60 feet, slender pyramid shape, sometimes oval, often with a curved or leaning trunk. Bark rusty brown, smooth when young, becoming rough and furrowed. Simple, alternate, oblong leaves to 10 inches, rich green and glossy on top, appear to fold in the sun and hang as if weeping; turn brilliant red and purple in fall. Blossoms white, urn-shaped, upside down, on long, drooping stalks to 10 inches.

TIME OF YEAR Blossoms spring to summer, depending on altitude

RANGE Southwest Pennsylvania down the Appalachian chain, just dipping into the Florida panhandle

ENVIRONMENT Prefers rich soils and mixed hardwood and softwood forests, but is adaptable. Full sun, some shade

METHOD OF PREPARATION Flowers used to make jelly and honey; chewing leaves can reduce thirst.

Green Deane's Notes

Sourwood honey is considered by some to be the best-flavored honey in North America, perhaps the world. Carson Brewer, a conservationist who wrote about life in Appalachia, mused that “most honey is made by bees. But [s]ourwood is made by bees and angels.”

Honey connoisseurs say there's an excellent crop of sourwood honey about once a decade, making it rare as well as good. This rarity is as much dependent on weather patterns as it is timing and beekeeping expertise. The honey's color can be white to amber, sometimes with a light-gray tint. Its texture is smooth, caramel-esque, buttery. The flavor is similar to gingerbread with a bit of kick in the aftertaste.

In years when there aren't enough good blossoms for honey, they can be used to make jelly. The leaves can also be chewed to quench thirst. (Don't swallow them, though—they're a laxative.) Some writers call the blossoms aromatic; I find their scent pleasant but barely detectable.

Food chemist Elias Yanovsky wrote a book in 1936 for the US Department of Agriculture called *Food Plants of North American Indians*, which was written in part as a response to the food shortages of the Great Depression. A few of Yanovsky's claims have been criticized as inaccurate, however. For example, he says that tribes in the Southeast ate young sourwood leaves in salads, but ethnobotanists such as Dr. Daniel Austin say these tribes did not usually eat raw vegetables.

Sourwood does have a rich history of medicinal uses, however. The Catawba used it as an infusion for menstrual issues and menopause, and the Cherokee used sourwood infusions to stop diarrhea. Indigenous people also used it to make a tonic for indigestion, nervousness, and asthma, among other ills. Francis Porcher, a Civil War doctor and botanist, wrote: “The leaves when chewed allay thirst. A decoction of the bark and leaves is also given as a tonic.” In the South, sourwood has also been used as a folk remedy for kidney and bladder issues, and to lower fevers.

Related to the blueberry and a member of the heath family, *Oxydendrum* is a monotypic genus, that is, *O. arboreum* is its only member. Sourwood is also called the sorrel tree and the lily-of-the-valley tree because its blossoms are similar to the flower’s. (See [page 260](#) for the entry on sorrel.)

Sow Thistle

Sonchus spp.

NOTABLE NUTRIENTS OR USES Calcium

SAFETY NOTES Foods rich in oxalic acid, such as sow thistle and other leafy greens, should be consumed with caution by people who are susceptible to kidney stones.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION *Sonchus oleraceus*, to a yard tall, leaves stemless, lobed, prickly-edged, dark green with a bit of blue, clasping the stem with two “ears.” *S. asper*, leaves green, prickly-edged, stemless, lance-shaped, sometimes lobed, curling back at the stem and making a spiny circle on the side of the stem; has a lot of spines that grow stiffer as they age. *S. arvensis* is similar to the other two, with lance-shaped, irregularly lobed leaves, but it can be very tall and has soft, small spines. It is, in fact, the softest of the

three, with a tactile sensation closer to that of wild lettuce. All species have several dandelion-like yellow blossoms and produce a milky sap.

TIME OF YEAR Spring, summer, and sometimes autumn in northern climates, December through April in the South

RANGE *S. oleraceus* and *S. asper*, all over North America; *S. arvensis*, North America except for Texas, Oklahoma, and most of the Deep South

ENVIRONMENT Lawns, fields, vacant lots, waste areas, parks

METHOD OF PREPARATION Young leaves in salads, older leaves boiled or steamed. I like to harvest the leaves when plants are 4-12 inches high.

Nutrition Notes: *S. oleraceus*

Per 100 grams

109 calories, 0.75 g fat, 50 g carbohydrates, 3.17 g protein, 3.25 g fiber

Vitamin C	78 mg
Calcium	32.4 mg
Copper	0.03 mg
Iron	3.8 mg
Manganese	0.12 mg
Phosphorus	58 mg
Potassium	622 mg
Selenium	258 mg
Zinc	0.77 mg
Carotenoids (including beta-carotene)	15.8 mg
Oxalic acid	122 mg

Nutrition Notes: *S. asper*

Per 100 grams

111 calories, 0.66 g fat, 45 g carbohydrates, 3.25 g protein, 3.56 g fiber

Vitamin C	63 mg
Calcium	99 mg
Copper	0.03 mg
Iron	3 mg

Manganese	0.09 mg
Phosphorus	49 mg
Potassium	583 mg
Sodium	190 mg
Zinc	0.88 mg
Carotenoids (including beta-carotene)	800 mcg
Oxalic acid	122 mg

Green Deane's Notes

There are at least 60 plants in the genus *Sonchus*. Three are common around the world: *Sonchus oleraceus*, *Sonchus asper*, and *Sonchus arvensis*, or, respectively, the Common Sow Thistle, the Spiny Sow Thistle, and the field sow thistle. I see the first two regularly.

As a genus, *Sonchus* varies a lot when it comes to prickles (a few or none to a lot), height (1–6 feet), and color (from green to purple). Young sow thistles can just be tossed in the herb pot, whereas some older leaves need to be trimmed of spines. Young and tender is the way to go: If the leaves have lots of spines, that's an indication of not only their age but also their flavor. Young leaves taste similar to lettuce; the flavor becomes more like Swiss chard as they age. Really old leaves tend to be extremely bitter, although you can boil them for 10–15 minutes to reduce the bitterness. I try to harvest the leaves when they're between 4 and 12 inches long. The young stalks are excellent peeled and cooked; young roots are also edible when cooked but tend to be woody.

Of the two species for which there is good nutritional research (see boxes), the more forager-friendly is *S. oleraceus*; it stays more tender through its aging cycle, and its spines do not grow stiffer as they age as on the *S. asper*.

Sow thistle is probably native to the Mediterranean area. In Greece it is known as *zohos* and has been used in winter salads for thousands of years. The ancient Greeks considered sow thistle wholesome and strengthening; in his *Natural History*, the Roman writer and naturalist Pliny the Elder wrote

that before the mythical Greek hero Theseus went on a quest to capture the Bull of Marathon, he was treated to a dish of sow thistles by an old woman named Hekale who had offered him shelter. *Sonchus* is also frequently eaten in New Zealand, particularly by the Māori, who call it *puha* or *rareke*. See [page 330](#) for my profile of Yellow Thistle, which is in a different genus.

Spanish Needle

Bidens spp.

NOTABLE NUTRIENTS OR USES Beta-carotene, calcium, phosphorus, fiber, iron

SAFETY NOTES A few studies have suggested that consuming Spanish Needle can be harmful, but the research—which dates from the late 1970s and mid-1980s—is inconclusive or associated with long-term consumption. Moderation is key. The seeds have sharp barbs and will stick to your clothes if you brush against them.

NATIVE STATUS Native and/or introduced



Nutrition Notes: *B. pilosa*

Per 100 grams

43 calories, 0.5 g fat, 8.4 g carbohydrates, 3.8 g protein, 3.9 g fiber

Calcium	340 mg
Iron	2.3 mg
Phosphorus	67 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Bidens pilosa*, fast-growing plant 2–6 feet tall, opposite leaves toothy, hairy or not, lobed or deeply incised. *B. alba*, compound leaves 1–5 inches long and up to 2.5 inches wide, bright green on top and hairy underneath, composed of three to nine sawtoothed oval leaflets. Tends to sprawl and root at the lower nodes if it touches the ground. The 1-inch flowers in stalked clusters look like small daisies with five or more white rays and pale-yellow centers. The ribbed seeds resemble flat, black needles with two to six barbed hooks at each end.

TIME OF YEAR Spring to fall, year-round in warmer climates

RANGE *B. pilosa*, Pennsylvania south to Florida and west to California and Oregon, plus Kentucky, Missouri, and Wisconsin; *B. alba*, primarily the Deep South and mid-Atlantic

ENVIRONMENT Full sun and moderately dry soils

METHOD OF PREPARATION Young leaves, tips, shoots as potherb. Some young leaves can be used raw in salads; try a little first. Flower petals can be eaten as a trailside nibble or in salads.

Green Deane's Notes

If there were a contest for underappreciated plants, the *Bidens* genus would be a heavyweight contender. Ask nearly anyone who's familiar with it, and they'll tell you it's a weed. The seeds are primarily to blame for its reputation as a nuisance: They have sharp barbs that latch onto clothing and animal fur if touched, giving rise to the common names Spanish Needle and Beggartick.

Yet pollinators—bees and butterflies—would be the poorer without these plants. In Florida, for example, *B. alba* is the third-most-common reliable

source of nectar for honey production. Quite an accomplishment for a plant that citrus growers and suburbanites are constantly trying to get rid of.

Whether cooked or raw, *Bidens* species have a pronounced tangy flavor. There are three progressive ways to reduce the tang: (1) soaking the leaves overnight in water, (2) cooking the leaves after soaking, and (3) letting the cooked leaves sit overnight. Or you can eat some raw; it just depends on what you like (or don't). *B. alba*, a common species in Florida, has an edible flower that adds a mild bite to salads. Young leaves—a few at a time—are also suitable for salads; the tips and shoots can be used as a potherb along with the leaves. The dried leaves of local *Bidens* species are also favored in Hawaii for making herbal tea.

A number of studies attest to the plant's health benefits, among them inhibiting the growth of harmful bacteria, lowering blood sugar and blood pressure, stimulating the immune system, and possibly protecting against cancer. Some researchers, however, recommend avoiding overindulging in foods—including *Bidens* species—that are high in saponins; while these chemicals have beneficial effects on heart health, cholesterol, and blood clotting, they can also upset your stomach in large quantities.

There are many edible *Bidens* that grow around the US, so check out your local species. In addition to *B. alba* and *B. pilosa*, those with edible leaves include *B. bipinnata*, *B. frondosa*, *B. odorata*, *B. parvifolia*, *B. tripartite*, and *B. laevis*. The leaves of *B. aurea* and *B. bigelovii* have been used for tea. *B. odorata*, a frilly yellow version, is also edible, although it is also a diuretic.

Spiderwort

Tradescantia spp.

NOTABLE NUTRIENTS OR USES No nutritional information available; riboflavin, niacin

SAFETY NOTES Identify the species you've found carefully; inedible species exist, and some cause contact dermatitis. See below.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Clumpy perennial to 2 feet tall. Leaves dark green, linear, with a broad base and narrow to pointed tip, often spiraling around the stems. Flowers are violet blue to purple, three-petaled, with contrasting yellow stamens, and open a few at a time for only one day; numerous flower buds.

TIME OF YEAR Flowers bloom year-round in warm areas, late May to early July in northern climes, leaves in season.

RANGE *Tradescantia virginia*, eastern and midwestern US except Iowa and New England; *T. bracteata*, Great Plains and Midwest south to Arkansas and Oklahoma; *T. ohiensis*, eastern and midwestern US as well as Texas

ENVIRONMENT Prefers well-drained, moist acidic soils but tolerates poor ones; full sun to full shade. Lawns, roadsides, moist waste areas

METHOD OF PREPARATION Leaves raw in salads or cooked in soups, stews, omelets. Stalks cook like asparagus. Flowers in salads or candied. I lactoferment the flower buds. Other parts tend to get tough when fermented.

Green Deane's Notes

Not surprisingly, there are many wild edibles for which little nutritional research has been done. Such is the case with spiderwort: We know only that in a 100-gram serving, it contains 0.17 mg of vitamin B2 (riboflavin) and 4.15 mg—a rather high amount—of vitamin B3 (niacin).

Spiderworts, which are part of the genus *Tradescantia*, are sometimes called dayflowers, as are their much-smaller cousins in the genus *Commelina*. The flowers of both stay open only one day. There are numerous species—perhaps two dozen in the United States, many (if not most) of them edible. Check locally, because a couple of crawling siblings definitely *aren't* edible and can also cause dermatitis if touched, especially the nongreen and striped varieties (*T. pallida* comes to mind). The most common edible species are *T. virginiana* and *T. ohiensis*, which are hard to tell apart.

The height of spiderwort's season is late spring, but it blossoms nearly all year; more importantly from a culinary standpoint, its leaves do not develop an objectionable flavor as the plant ages. The leaves are good for salads—spiderwort is one of the few salad greens that can take summer heat—or in soups and stews. The stems can be braised like asparagus, or you can pickle them. (The leaves aren't the best for pickling because fermenting gives

them an unappetizingly chewy texture.) The pretty blue flowers, at one time favorites for candying, also make very nice additions to backyard salads and are popular in England for making a light-blue wine. *T. fluminensis*, which looks like a *Commelina* with a white flower, is edible too. There are other white (and rose-colored) blossoms, but those are too uncommon to recommend.

Spring Beauty

Claytonia virginica

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION *Claytonia virginica*, perennial 3–6 inches high, with flowers a raceme on the ends of stems. Each blossom up to half an inch across, five pink-streaked white petals, two green sepals, five stamens with pink anthers, pleasantly scented. Stems light green or reddish green, smooth. Flowers open when it's warm and sunny, close when cloudy or at night. Basal leaves linear or linear-lanceolate, curving back, smooth along the edges, fleshy. Each 3- to 6-inch leaf has a single central vein, width varies. Leaves do not have stems, but the leaves of *C. caroliniana* (which are ovate) do have a short stem. Roots are 2–3 inches underground. If you see a

lot of blossoms in a circular/semicircular formation, there may be a larger root in the middle.

RANGE Eastern two-thirds of the US, starting with Texas and heading north and east, excluding Florida, New Hampshire, and Maine

ENVIRONMENT Prefers dappled sunlight in spring; moist to slightly dry conditions; rich, friable soil. Can adapt to semishaded lawns if not mowed in the spring

TIME OF YEAR Because of their size, spring beauties take a while to collect. Best harvested in the fall but hard to find then, and in the spring they use their stored energy to reproduce. You either have to know where they are or catch them in early to midspring (March to May) as soon as they can be identified.

METHOD OF PREPARATION All parts above ground raw or cooked. Roots can be eaten raw but taste much better cooked and peeled. Peeling is more easily done after cooking.

Green Deane's Notes

Spring beauty is aptly named. Actually there are several spring beauties, and most of them are edible in similar ways, but we'll focus on *Claytonia virginica*.

This wild edible is a longtime favorite of foragers. It is abundant in some areas, rare in others; thus, you need to forage with some local consideration. The plant grows small roots that remind people of tiny potatoes, hence the nickname "Fairy Spuds." At least one botanist says you can eat them, "but their small size makes this rather impractical." Famous forager Euell Gibbons—the guy from those 1970s Grape-Nuts commercials—would beg to differ.

In his book *Stalking the Wild Asparagus*, Gibbons wrote about eating spring beauty daily, if not twice a day, for several weeks: “We tried them fried, mashed, in salads, and cooked with peas, like new potatoes. All these ways were completely successful, but, as regular fare, we preferred them just boiled ‘in the jackets.’ My friend grew so fond of this food that he was afraid he would experience withdrawal symptoms when the supply was exhausted.” While Gibbons’s friend thought they tasted like potatoes, Gibbons thought they were sweeter—closer to chestnuts in flavor. The species is reported to be high in potassium as well as vitamins C and A, but I haven’t found any research to corroborate that.

The small roots, or fleshy taproots, of several species were eaten by Indigenous people, as well as the leaves. Those species include *C. acutifolia* (Alaska), *C. caroliniana* (eastern US), *C. lanceolata* (western US) *C. megarrhiza* (Rocky Mountains), *C. tuberosa* (Alaska), and the aforementioned *C. virginica*.

Spruce

Picea spp.

NOTABLE NUTRIENTS OR USES No nutritional information available; vitamin C

SAFETY NOTES See preparation notes below.

NATIVE STATUS Native and/or introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Black spruce (*Picea mariana*), conifer 30–50 feet tall and 6–10 inches through. Needles dark bluish green above, lighter below, short (0.5 inch long), four-sided, growing around the branches; cones smallest of all spruces (0.5–1.5 inches long), dark purple ripening to reddish brown.

TIME OF YEAR Tips in spring, resin for chewing gum anytime you can find it dry and hard

RANGE *P. mariana*, Canada, New England, and the mid-Atlantic south to Pennsylvania; less commonly found as far south as North Carolina and in the northern parts of the Great Lakes states.

ENVIRONMENT Look for spruces near bogs and where Tamaracks grow. If you're near a bog, chances are it's a black spruce.

METHOD OF PREPARATION Tips fresh off the tree (you can also buy them dried); resin hard and dry off the tree, then heated and filtered to make gum

Green Deane's Notes

Commercial chewing gum made from spruce resin has a long history. Americans began to chew it in the mid-1800s, but as demand for spruces in the paper industry ramped up in the 20th century, gum production declined. When I was a kid growing up in Maine, nearly every store carried spruce gum, though I usually got mine straight from the tree. Historically, the main source of resin was the black spruce (*Picea mariana*), but any tree in the *Picea* genus will do for making your own gum.

The first step in making spruce gum is collecting the resin. Start by checking the trunk: Wherever you find damage to the bark (from wind or bear claws, for instance), look for lumps of hardened resin. Skip the soft stuff—it will only make a gooey mess if you try to work with it later. The color ranges from cream to yellow or pink to brown. Visiting several trees over a couple of hours can get you about a pound of hard resin, but a smaller amount will suffice for experimenting.

The next step is to reduce the amount of bark, twigs, and other debris in the resin. To do this, put the resin in a heavy cloth (a canvas bag works well) and pound it until it has the texture of fine sand. Once it's pulverized, a small screen works well to winnow out the woody bits—much easier than picking them out by hand.

Step three requires some preparation. You'll need a pot to heat the resin in. A tall, small pot—think an espresso pot, an ibrik—is best for safety and ease of handling. You'll also need a shallow metal pan for the hot resin to cool in. This pan needs to be wrapped in cheesecloth or muslin, which you'll pour the heated resin through to filter it further. Ideally, both pots are old ones that you don't need for cooking anymore, as you won't be able to get all of the resin cleaned out of them.

Now put your granulated resin in the heating pot, add enough water to make a slurry, and warm it *slowly* over low heat. *Note:* Spruce resin can catch fire easily, and hot resin can burn you badly if it gets on you, so be careful!

In time the hot water will melt the resin, which will float to the top. When all of the resin has liquefied, pour it quickly into your cloth-covered cooling pan. It will take about a half hour for the resin to reharden; when it does, remove the cloth and pour off the water. A few sharp taps on the bottom of the pan with a spoon should dislodge most of the resin. Then break up the hardened resin into smaller pieces. Sprinkle them with cornstarch—or powdered sugar, if you have a sweet tooth—to keep them from sticking together, and store the gum in a cool, dry place.

Heads-up: Spruce gum is brittle at first and will shatter into tiny pieces in your mouth, so you might want to pass if you have fragile dental work. You must keep chewing the little pieces and collecting them into a unified wad. As it softens in your mouth, it will take on the familiar chewing gum consistency and will stay that way as long as it remains warm. (If you leave it on the bedpost overnight, you're back to square one.) The taste is, well, *sprucy*—strong and medicinal—but it becomes almost sweet after several hours of chewing.

Science confirms that the edible parts of spruce are chock-full of nutrients: The tips, for example, are an excellent source of vitamin C. (A big clue is their lemony taste.) The problem is, the nutritional data is rarely quantified

in specific terms. For example, a Canadian company that sells dried spruce tips notes on its website that they contain not only vitamin C but also polyphenols, flavonoids, carotenoids, and shikimic acid (used to make the flu medication oseltamivir, aka Tamiflu), but the amounts aren't listed on the label.

Spurge Nettle and Texas Bullnettle

Cnidoscolus spp.

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES When digging for the roots, be careful not to touch the bristly hairs on the aboveground parts of the plant—like other nettles, they cause a painful sting that can last an hour or more. The sting is less intense than that of nettles in the *Urtica* genus, however (see stinging nettle, [page 271](#)).

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Spurge nettle (*Cnidoscolus stimulosus*), perennial plant to a foot high covered with stinging hairs; leaves alternate, simple, palmate, three- to five-lobed; flowers white, tubular, five-petaled, fruit a three-seeded capsule. Blooms year-round in Florida but is most showy in the spring and

early summer. Leaves of Texas Bullnettle (*C. texanus*) are more crinkly than those of *C. stimulosus*.

TIME OF YEAR Year-round but best in fall; the larger the plant, the larger the tuber

RANGE *C. stimulosus*, southeastern US east of the Mississippi River; *C. texanus*, Texas, Arkansas, Kansas, and Oklahoma. Louisiana has both species.

ENVIRONMENT Forest or other natural areas in sandy woods, old fields, roadsides, dry pastures, dunes

METHOD OF PREPARATION *C. stimulosus*, boil root whole like a potato; after cooking, remove peel and stringy inner core, which is too tough to eat. *C. texanus*, cooked root edible, seeds roasted after removing from their hulls. (Botanical references disagree regarding whether *C. stimulosus* seeds are edible.)

Green Deane's Notes

When I first started spading for spurge nettle (*Cnidoscolus stimulosus*) roots, I couldn't find any. I could locate and identify the plant with no problem—but I would dig and dig and dig and not find the root. Then one day I was filling in yet another deep hole when I happened to notice a small piece of root on the bottom of the huge heap of sand I had piled up. I've never failed to find a root since, and always within about a foot of the soil's surface.

What's the secret? Well, the first thing to be aware of is that the root breaks very easily. Also, the outside of the root tends to be the same color as the soil it's in. When most people dig for the root, they dig the wrong way and throw away the root with the dirt, never seeing the broken pieces. Here's the right way:

Once you've identified the plant, measure out a shovel blade's width away from it, then start digging at least a half a foot or more to one side of the plant's main stem. Dig down a foot—by now you should have also gotten rid of all of the plant aboveground. Now, using the side of the shovel at the bottom of your hole, start shaving the dirt away horizontally, toward the vertical root where the plant was. Take your time. By the time you find the root, you'll have a hole that is roughly shaped like a lopsided triangle.

Reach into the hole to find the root. (Don't worry; the nettle stings only from just below the ground up.) Once you find the root, finish digging by hand or with a trowel. Remove all the dirt from the root, being careful not to pull on it in any way. The root is shaped kind of like a cross between a carrot and a large sausage, with a potato- or earth-colored skin. The bottom end gets skinnier, so you'll have to break it at some point and trim off the stem top. The root often has a taproot that seems to go on forever.

I boil spurge nettle root and then peel it like a potato. Sometimes the outer covering comes off like bark, depending on the age of the root. It has a nonedible cord up the middle that pulls out like a string. Once cooked, some folks put the root through a ricer to make it softer, but I just chop it up. With butter and a little salt and pepper, it tastes like al dente pasta. It becomes edible but is never "soft" but rather like a cold potato in texture. Don't cook it in aluminum.

The seeds of *C. texanus* can be roasted in the oven for 30 minutes, but first you need to remove them from their shells: Put the seedpods in a paper bag and leave in a warm, dry place. The pods will crack and the seeds can be shaken out.

A 1954 study found that the root of *C. texanus* was high in carbohydrates, while a 2012 study found that a related nettle, *C. quercifolius*, contained phytochemicals with significant antimicrobial activity against *Staphylococcus* strains. A 2007 study found that the *C. texanus* root

contained 26 compounds, including 15 flavonoids, three coumarins, three coumaric acid derivatives, four triterpenoids, and one phytosterol. These chemicals have antioxidant, antifungal, antiviral, anti-inflammatory, and heart-protective properties, among other health benefits.

Star Fruit

Averrhoa carambola

NOTABLE NUTRIENTS OR USES Vitamin C, potassium

SAFETY NOTES What the nutrition chart below doesn't tell you is that star fruit has a good amount of oxalic acid, the main chemical that gives it a tart taste even when sweet and ripe. If you must avoid spinach and the like because of oxalic acid, don't eat star fruit.

NATIVE STATUS Native to Sri Lanka; introduced to Florida in 1887



Green Deane's Itemized Plant Profile

IDENTIFICATION Slow-growing, short-trunked, many-branched, bushy, rounded crown growing to 20–30 feet. Leaves spirally arranged, alternate, with 5–11 nearly opposite leaflets, soft, smooth on upper surface, finely hairy, whitish underneath. Leaflets can fold together at night. Flowers red-stalked, lilac with purple streaks. Fruit showy, oblong, five- to six-angled lobes, thin, waxy, orange-yellow skin, juicy, crisp, yellow when fully ripe,

sour to sweet. Sliced cross-sections form a star. Thin, brown seeds. Grows easily from seed

Nutrition Notes

Per 100 grams

31 calories, 0.3 g fat, 6.73 g carbohydrates, 1 g protein, 3 g fiber

Vitamin A (as beta-carotene)	64 IU (18.3 mcg RE)
Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.02 mg
Vitamin B3 (niacin)	0.37 mg
Vitamin B5 (pantothenic acid)	0.4 mg
Vitamin B6 (pyridoxine)	0.02 mg
Vitamin C	34.4 mg
Vitamin E	0.15 mg
Calcium	3 mg
Copper	0.14 mg
Iron	0.08 mg
Magnesium	10 mg
Manganese	0.04 mg
Phosphorus	12 mg
Potassium	133 mg
Selenium	0.6 mcg
Sodium	2 mg
Zinc	0.12 mg
Choline	7.6 mg
Lutein	66 mg

TIME OF YEAR Mainly late summer to early winter; year-round in warmer climates

RANGE Does not occur in the wild but can often be found on the ground in areas where it is grown commercially. In the US, it is grown in Florida, California, Texas, and Hawaii.

ENVIRONMENT Warm and humid, best in full sun. Not overly particular about soil but grows faster and produces more in rich loam. Does not like

limestone, so if you grow your own, you have to add iron, zinc, and manganese to the soil.

METHOD OF PREPARATION Out of hand or used in salads or puddings, tarts, stews, curries, or preserves. Green fruit makes a good relish. The fruit can also be used to polish brass.

Green Deane's Notes

Star fruit, also called carambola, lives a kind of split existence. In stores it commands a high price—several dollars per fruit—yet in my foraging classes, I often see it rotting on the ground. I can understand folks not wanting to eat wild plants or even weeds, but when we allow very recognizable fruit to drop and rot, we have become estranged from nature.

There are actually two distinct varieties: a small, sour one with a lot of oxalic acid and a larger, sweeter, milder-tasting one with less oxalic acid. (As noted above, star fruit is best avoided by people who must watch their oxalic acid intake—for example, due to kidney problems.)

The tree itself is attractive. I used to grow a variety called Golden Star, and I kept my tree short so I could reach the top with just a ladder. It was prolific even though I lived outside its usual growing zone (8 miles north of Orlando). The tree was planted in a protected location, on a hill next to a large swimming pool (to radiate heat).

Stinging Nettle and Heartleaf Nettle

Urtica spp.

NOTABLE NUTRIENTS OR USES Calcium, potassium, phosphorus, magnesium, vitamin A

SAFETY NOTES Be very careful around nettles—when touched, the bristly hairs cause a painful sting whose effects can last up to a week or longer. Gloves, long sleeves/pants, and closed-toe shoes or boots are recommended when foraging.

NATIVE STATUS Introduced and/or native

Green Deane's Itemized Plant Profile

IDENTIFICATION *Urtica dioica* (Common Stinging Nettle), unbranched weed 3–7 feet tall; leaves opposite, round to oval, serrated, small inconspicuous flowers yellow, purple, or green. *Urtica chamaedryoides* (Heartleaf Nettle), 1–2 feet high, leaves heart-shaped, tiny flowers green or white. All nettles have fine bristly hairs all over the stem, leaf stalks, and underside of leaves.

TIME OF YEAR Spring to fall or year-round, depending upon the climate

RANGE *U. dioica*, all over the US except Hawaii; *U. chamaedryoides*, southeastern US

ENVIRONMENT Moist areas, along streams and woodlands

METHOD OF PREPARATION Young shoots and leaves boiled as a potherb. The cooking water is good as a tea or soup base. Dried leaves can also be used to make tea. Mature stems can be used for making rope.



Nutrition Notes:

U. chamaedryoides

Per 100 grams

307 calories, 0.1 g fat, 7.5 g carbohydrates, 2.7 g protein, 7 g fiber

Vitamin A (as beta-carotene)	2011 IU (603.3 mcg RE)
Vitamin K	498 mcg
Calcium	481 mg
Manganese	57 mg
Phosphorus	71 mg
Potassium	334 mg
Lutein and zeaxanthin	4178 mcg

Green Deane's Notes

I was hiking one day when I saw what I thought was a mint I hadn't seen before. I picked a leaf and regretted it—badly. Welcome to the world of stinging nettles! As luck would have it, I also picked the North American nettle that probably stings the worst: *Urtica chamaedryoides*, or Heartleaf Nettle.

Humans have been using nettles for thousands of years. They are an excellent source of not only food but also medicine and material for making rope or

clothes. They also seem to be an instrument of grade-school torture, judging by the videos on YouTube involving kids and nettles.

Stinging hairs cover nettles' leaves and stems. Soaking, cooking, refrigerating, wilting, or drying neutralizes the sting. To be on the safe side, though, don't eat the plant after it has flowered—it reportedly can irritate the urinary tract then, not to mention that nettles get tough and stringy as they age.

Cooked nettles can be used in a wide variety of recipes, from polenta to pesto to soup. When cooked for 10–15 minutes, they have a very mild flavor similar to spinach. The water you cook the nettles in can be used for tea or as a soup base; you can dry the leaves and use them for tea as well. If you're on the trail, you can use an alternative method of preparing nettles courtesy of Ray Mears, an English wild-food expert: He places the entire plant near a fire for a few minutes until it completely wilts, and that stops it from stinging. If you leave them a little longer, the fire-dried leaves taste like crispy kale.

I've been stung by both a local nettle called *Cnidoscolus stimulosus*, or spurge nettle (see entry on [page 268](#)), and the one spotlighted here, Heartleaf Nettle. (I don't have any personal experience with Common Stinging Nettle, or *Urtica dioica*, but I'm willing to bet that Heartleaf Nettle packs the stronger sting.) The burning from spurge nettle begins slowly and intensifies over an hour or so, then goes away completely within 2 hours—think a temporary mild sunburn. On the other hand, Heartleaf Nettle hits hard, throbs, then calms down a bit after about an hour, but it leaves painfully sore welts behind for several days; the pain worsens again after contact with water. (I was in misery for a week at least.) A paste of baking soda brings some relief; I didn't have any luck with the leaf juice of jewelweed, dock, or plantain, all commonly recommended remedies.

Stork's Bill

Erodium cicutarium

NOTABLE NUTRIENTS OR USES Vitamin A, calcium, phosphorus, protein

SAFETY NOTES Looks similar to water hemlock, a highly toxic plant (see Deane's Notes). When foraging for Stork's Bill, make sure the stems are hairy.

NATIVE STATUS Introduced



Nutrition Notes	
Green parts, per 100 grams	
calories NA, fat NA, carbohydrates NA, 2.3 g protein, 2.6 g fiber	
Vitamin A	2333 IU (700 mcg RE)
Calcium	237 mg
Magnesium	57 mg
Phosphorus	49 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Hairy, sticky, sprawling plant usually ankle-high, grows to 12 inches tall in warmer areas. Stems have short white hairs and bright-pink, five-petaled flowers in loose clusters, often with dark spots on their bases. Leaves reddish green, pinnate, fernlike, to 4 inches long, arranged in two ranks, one on either side of the midrib. Seedpod long, shaped a stork's bill, bursts open into a spiral when ripe; seeds have little feathery parachutes. The seeds have 9 calories each.

TIME OF YEAR Flowers February to October, depending upon climate, early spring in the South, late spring in the North. Seeds available late summer to fall. Overwinters well and is often the first green you will see after the snow melts.

RANGE Throughout the US and Canada

ENVIRONMENT Deserts, grasslands, rangelands, prairies, roadsides, lawns, and coastal dunes. Prefers sunny areas and sandy, nonacidic soils

METHOD OF PREPARATION Leaves raw in salads or cooked as a potherb, although the entire plant is edible. The root can be chewed like gum.

Green Deane's Notes

Native to Mediterranean Europe, Stork's Bill (aka filaree) came here with the Spaniards and later proliferated with the planting of alfalfa, whose fields it likes to inhabit. Now it's naturalized throughout North America. In northern states and Canada, it's an annual; in southern and southwestern states, it's a biennial. It's particularly common in deserts and arid grasslands.

Scientifically Stork's Bill is called *Erodium cicutarium*. The species name, *cicutarium*, refers to its resemblance to water hemlock (*Cicuta maculata*), which is deadly—don't mistake the two. The most significant difference between them when young is that Stork's Bill has hairy stems, while water hemlock is not hairy. When older, there is a huge size difference, water

hemlock being the much taller of the two (up to 6 feet tall versus about a foot for Stork's Bill). Finally, where Stork's Bill has bright-pink flowers, poison hemlock has clusters of tiny white blooms, similar to Queen Anne's lace.

All parts of Stork's Bill are edible raw or cooked, but the leaves are the part that is most commonly eaten; as usual, young and tender is better than old and tough. They're best lightly steamed, but they can also be boiled in slightly salted water or chopped and added to salads raw. When picked young, they have a flavor similar to parsley. Once Stork's Bill is in bloom and seeding, don't confuse it with cranesbill (*Geranium carolinianum*), which looks like the Stork's Bill but has palmate (versus pinnate) leaves. While edible, it is very bitter; as with Stork's Bill, you can eat it raw or cooked.

At least three Native American groups—the Blackfoot, Shoshone, and Paiute—included Stork's Bill in their diets. It is also grazed upon by cattle, sheep, and goats; the seeds are collected by various species of harvester ants and are eaten by upland game birds, songbirds, and small rodents such as kangaroo rats. The Brown Argus butterfly also feeds off the plant. And as it tends to be a very low-growing plant, it's a food source for the desert tortoise as well.

Strawberry

Fragaria virginiana

NOTABLE NUTRIENTS OR USES Vitamin C, potassium, phosphorus, calcium, magnesium

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Small plant with five-petaled white flowers, leaves of three, toothed (poison ivy usually does not have fine teeth). Blossoms to an inch across, on separate stalks; familiar red fruit drooping, small; 10 small, green sepals at the base of the fruit, about 200 seeds per berry. Spreads by horizontal runners

TIME OF YEAR Late spring to early summer

RANGE Throughout North America

ENVIRONMENT Full sun in pastures, fields, moist ground, edges of woods, by sidewalks

METHOD OF PREPARATION Limited only by your time and imagination: out of hand, pies, jellies and jams, drinks, desserts

Green Deane’s Notes

When I was a kid, there was a 120-acre pasture across the road where wild strawberries grew. They were the size of large peas, and mostly sour—finding sweet ones was a real treat. I probably expended more calories finding them than the calories they provided. And they would grow just as readily in a driveway crack as in a cow pasture.

Nutrition Notes	
Per 100 grams	
35 calories, 0.22 g fat, 7 g carbohydrates, 0.64 g protein, 2 g fiber	
Vitamin A	11 IU (3.3 mcg RE)
Vitamin B1 (thiamine)	0.03 mg
Vitamin B2 (riboflavin)	0.02 mg
Vitamin B3 (niacin)	0.39 mg
Vitamin B5 (pantothenic acid)	0.12 mg
Vitamin B6 (pyridoxine)	0.04 mg
Vitamin B9 (folic acid)	8 mcg
Vitamin C	56 mg
Vitamin K	2.1 mcg
Calcium	12 mg
Copper	0.12 mg
Iron	0.28 mg
Magnesium	11.8 mg
Manganese	0.28 mg
Phosphorus	20 mg
Potassium	89 mg
Selenium	0.4 mcg
Sodium	10 mg
Zinc	0.18 mg

Beta-carotene	7 mcg
Lutein and zeaxanthin	22 mcg

In addition to their usual delicious uses, strawberries can settle an upset stomach, and the juice is good for facial sores, red eyes, and excessive tears. Root decoctions soothe liver problems, staunch menstrual flow, and firm the gums. Nearly every Native American group had a medical use for the entire plant. Tea made from the leaves reportedly works both as a laxative and as a remedy for diarrhea. Conflicting information aside, it's also loaded with antioxidants—according to the *Czech Journal of Food Science*, strawberry-leaf tea contains smaller amounts than red wine and green tea but amounts comparable to those in white wines and fruit drinks. When making tea, use only fresh or quickly dried leaves.

The word *strawberry*, by the way, doesn't have anything to do with straw; rather, it comes from the phrase “strewn berry”—a reference to the berries being strewn on the plants. What's more, strawberries aren't actually berries but the enlarged ends of the stamens, or the male part of the flowers (the plant is a member of the rose family). If you find a tasteless strawberry in a northern area, it's probably *F. vesco*, also known as the Woods Strawberry. There's also a mock strawberry (see [page 194](#)).

Sugarberry (Hackberry)

Celtis laevigata

NOTABLE NUTRIENTS OR USES Potassium, calcium, phosphorus, protein, fiber

SAFETY NOTES See preparation notes below.

NATIVE STATUS Native



Nutrition Notes: *C. australis*

Per 100 grams

calories NA, fat NA, carbohydrates NA, protein NA, fiber NA

Calcium	269 mg
Copper	0.45 mg
Iron	5.1 mg
Manganese	1.2 mg
Phosphorus	143 mg
Potassium	1060 mg
Zinc	0.35 mg
Choline	71 mg

Green Deane’s Itemized Plant Profile

IDENTIFICATION Leaves alternate along the stem, medium to dark green, 2–4 inches (twice as long as wide), oval, serrated only on upper half of leaf, asymmetrical (lopsided), three prominent veins, leaf spots and galls common, turn yellow in the fall, twigs zigzaggy. Flowers greenish yellow in spring. Fruit a green berry turning to orange, red, or dark purple. Branches droop; gray bark has patches of corky warts, no thorns.

TIME OF YEAR Fruits late summer or fall

RANGE *Celtis laevigata* (sugarberry or Sugar Hackberry), from about Maryland south to Florida and west to California and the northwestern US, excluding the upper Great Plains; *C. occidentalis* (Common Hackberry), northern Canada to northern Florida and west to the Rockies

ENVIRONMENT Likes full sun and prefers moist, rich soils

METHOD OF PREPARATION Ripe fruit pulp raw or cooked. Stone and inner kernel raw or cooked, stone shell ground up as seasoning, kernel roasted as a delicacy, entire berry pulp and seed crushed and cooked.

Green Deane's Notes

When it comes to sugarberry (*Celtis laevigata*) and the Common Hackberry (*C. occidentalis*), the two species' ranges overlap, as do opinions regarding what kind of fruit you have when you're looking at them. Usually fruiting in the fall, the berries of both are about the size of a pea or chokecherry. As September approaches, the fruit goes from hard and green to softer and burnt orange to dark red. The flavor is slightly sweet.

A 1941 study examined the nutrients in *C. occidentalis* and expressed them in percentages. Fresh fruit in that study consisted of 5.56% available protein, 5.57% crude fiber, 0.64% tannins, 9.76% calcium, 0.38% magnesium, and 0.17% phosphorus. A second study yielded higher results

in some elements: calcium was 12.42%, magnesium 0.49%, phosphorus 0.22, and fiber 8.09%.

Research on *Celtis australis*—a European species—showed that the seed makes up 38% of that fruit's weight and, at least in that species, comprises up to 81.5% sugar. Perhaps the study was in an industrial area because, in addition to seven common minerals (see box), they also found tiny amounts of nickel, lead, silicon, bromine, and comparatively a large amount of choline. (The plant material was collected in Croatia and analyzed in Slovenia.)

Back in North America, Native Americans would grind the entire fruit—stone, kernel, and all—and make a paste out of it, either to bake in a fire or to mix with fat and parched corn to make a gruel. Others removed the pulp, eating that separately; then they lightly dried the kernel and cracked it. The inner kernel was considered a delicacy, and the outer shell was ground and used as a spice, usually for meat. The stone can also be eaten raw and stores well in oil.

While *C. laevigata* and *C. occidentalis* are the most common species in the lower half of the United States, several others, many of them edible, are found throughout North America and the world; check out the species nearest you. Sugarberry and Common Hackberry are common hosts for mistletoe; they are good candidates for bonsai; and, like the black walnut, their leaf litter discourages the growth of other plants.

Sugarcane

Saccharum officinarum

NOTABLE NUTRIENTS OR USES Sugar, vitamin C, phosphorus, calcium, iron, fiber

SAFETY NOTES While sugarcane isn't inherently toxic to animals, it's a bad idea to feed it to pets or horses for the same reasons that too much sugar is bad for humans.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Large perennial grass 3–15 feet high, solid, juicy, lower internodes short, swelling, sheaths overlapping; flower a panicle, plumelike, 8 inches–2 feet long. In less technical terms, it looks like corn that mated with bamboo.

TIME OF YEAR A year to 20 months after planting

RANGE Grown commercially in Florida, Louisiana, Texas, and Hawaii

ENVIRONMENT Tropical and subtropical areas; a wide range of soils from Hawaiian volcanic ash to Florida muck. Fertilizer and/or manure is important.

METHOD OF PREPARATION Green parts cooked; stalk can be peeled and chewed for sugar content, or you can press out the juice. When eating it raw, spit out the fiber.

Nutrition Notes

Stems, per 100 grams*

62 calories, 0.1 g fat, 16.5 g carbohydrates, 0.6 g protein, 3.1 g fiber

Vitamin B1 (thiamine)	0.02 mg
Vitamin B2 (riboflavin)	0.01 mg
Vitamin B3 (niacin)	0.1 mg
Vitamin C	3 mg
Calcium	8 mg
Iron	1.4 mg
Phosphorus	6 mg

*See Deane's Notes for information on other parts of the plant

Green Deane's Notes

I've been growing sugarcane for years in my yard. *Neglecting* is probably more accurate, but it grows happily just the same, even though I'm more than 200 miles north of South Florida—the center of sugar production in

the state—and on a dry hill. That’s the first surprise about sugarcane: Though it’s primarily a tropical and subtropical plant that’s grown commercially, it also grows in the wild.

Secondly, while sugarcane is, well, mostly sugar, you might also be surprised to know that it contains other nutrients. In addition to the ones in the stems (see box), the flowers have (per 100 grams) 25 calories; 4.6 grams of protein; 0.4 gram of fat; 3 grams of carbohydrates; 40 mg of calcium; 80 mg of phosphorus; 2 mg iron; 0.08 mg of B1 (thiamine); and 50 mg of vitamin C, which is close to your daily need. The leaves (per 100 grams) contain 75 calories, 1.8 grams of protein, 0.8 gram of fat, 17.7 grams of carbs, and 3 grams of fiber. Finally, the hay contains (per 100 grams) 2.6 grams of protein, 1.2 grams of fat, 92.1 grams of carbs, 43.1 grams of fiber, 4.1 grams of ash, and 3,600 mg of calcium.

And now, some history: Sugarcane is probably from India originally and reached the Mediterranean Basin around 800 AD. About 700 years later, sugarcane came to the New World, where it played a significant and controversial role—and still does. Sugar was one of the first pharmaceutical ingredients, specifically a sweetener used to mask the bitter taste of medicine, hence the lyric “A spoonful of sugar helps the medicine go down.” And it was once included in military survival kits as a source of portable energy on the battlefield.

Sumac

Rhus spp.

NOTABLE NUTRIENTS OR USES B vitamins, vitamin C, vitamin A

SAFETY NOTES Some sumacs are poisonous—see Deane’s Notes for how to identify them.

NATIVE STATUS Native



Green Deane’s Itemized Plant Profile

IDENTIFICATION Shrub or small tree 4–35 feet tall. Leaves usually pinnate and arranged in a spiral; flowers five-petaled, greenish, creamy white, or red, in dense panicles (spikes) 1–4 inches long, in terminal clusters at the end of branches. Twigs and leafstalks velvety, round with raised dots. Fruits (drupes) red or purple, short, and hairy, also in terminal clusters, collectively called bobs. Leaves of *Rhus copallinum* (shining sumac) are large and divided into 11–23 leaflets; midrib has thin “wings,” or growths on either side of the stem between sets of leaves.

TIME OF YEAR Tends to fruit the end of summer in northern climes, a bit later in warmer areas; fruit often lasts through winter and into spring.

RANGE Across North America

ENVIRONMENT Sunny to shady dry areas; often found on banks

METHOD OF PREPARATION Ripe berries soaked in warm water, filtered, then sweetened to make a lemonade-like drink. Whole berries can be made into a tea. Peeled shoots raw or cooked. Seed coating ground and used as a spice

Nutrition Notes	
Per 100 grams	
95 calories, 5 g fat, 16.5 g carbohydrates, 5 g protein, 11.25 g fiber	
Vitamin A	267 IU (80 mcg RE)
Vitamin B1 (thiamine)	3.1 mg
Vitamin B2 (riboflavin)	2.47 mg
Vitamin B3 (niacin)	1.8 mg
Vitamin B6 (pyridoxine)	6.98 mg
Vitamin C	3.99 mg
Vitamin B7 (biotin)	0.43 mg
Vitamin B12 (cyanocobalamin)	1 mg

Green Deane’s Notes

The sumac genus, *Rhus*, has some 250 species worldwide, many of them in the US. One species, *R. glabra*, or smooth sumac, is found in all contiguous 48 states. In the Northeast, staghorn sumac (*R. typhina* or *R. hirta*) predominates; it’s the largest of the sumacs and the one with the least-tart berries. The fruit forms dense, conical clusters of small red drupes at the terminal end of the branches.

In the South, the predominant sumac is *R. copallinum*, also known the shining sumac or Winged Sumac, among other common names. This attractive plant turns flaming red in the fall before losing its leaves. The fruits are BB/pea-size berries, with a single seed inside of each berry. You know the berries are ripe when they taste tart—touch your finger to a berry,

then your finger to your tongue to test, but not right after a rain, which washes off the malic acid, the chemical responsible for the tartness.

Soaking the unwashed berries in faucet-hot water releases the acid to make a drink, but you'll want to filter the liquid twice (through cloth, then a coffee filter or the like) to get rid of the little, irritating hairs. To make a lemonade-like drink, use 1–2 cups of berries per quart of water. (I prefer 2 cups with less water.) The berries can also be steeped in boiling water to make a tea, but it can become too bitter to drink due to the tannic acid in the seeds. The seed coating, when ground, adds a lemony flavor to salads or meats.

There is another edible part to the sumac: the young shoots. First-year shoots from old stumps are the best. Look at the end of a shoot after you break it off: If you see pith, which is an off-white core, it's too old. Break off that part, then look again. You want a shoot stem that is all green inside. Then strip off the leaves and peel the shoot. You can eat it raw or cooked. The flavor is “perfumey” and slightly astringent.

Sumac is a good source of B vitamins as well as a decent source of vitamin C, although you have to consume a lot of berries or tea to get any appreciable amount of the latter. The plant is also high in malic acid, which is what makes apples tart and is the main acid in wine. In addition, sumacs contain a wealth of antioxidants with anti-inflammatory, antifungal, and antibacterial properties.

In the greater sumac family, *Anacardiaceae*, are plants that are toxic to the touch or are edible but can make people ill who are allergic to them: poison sumac, Brazilian pepper, cashews, mangoes, and pistachios. The berries and leaves of poison sumac contain urushiol, the same oily substance in poison ivy (that's responsible for the maddening itchy rash. Brazilian pepper is on the cusp of toxic and nontoxic—the edible seeds can be ground and used like pepper, but the leaves can cause contact dermatitis in people with

sensitive skin. Cashew shells contain urushiol. Mangoes and pistachios taste good, but some people are allergic to them.

In a nutshell (so to speak), edible sumacs have red, purse-shaped berries with a fine coating of fuzz (often gray) in cone-shaped clusters at the end of main branches. They have skinny, lance-shaped leaves and like dry ground. Poison sumac has roundish leaves, pointy on the ends, has white or light-green fruit that grows out from where a leaf meets the stem, and grows only in very wet places. Brazilian pepper has long, ovalish leaves and clusters of smooth, bright-pink/red, hairless berries growing off stems.

Sunflower

Helianthus annuus

NOTABLE NUTRIENTS OR USES Phosphorus, potassium, zinc, niacin, vitamin E, unsaturated fat

SAFETY NOTES In rare cases, people with nut allergies may also be allergic to sunflower seeds; they can also cause contact dermatitis in some people.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Tall annual or perennial plants to 12 feet or so. Rough, hairy stem, branched on top. Toothed leaves often sticky, rough. Lower leaves opposite, ovate or heart-shaped, upper leaves alternate and narrower. Flower heads have bright-yellow rays. Young flower heads follow the direction of the sun, turning east to west during the day and turning back to east overnight; older plants stop turning but face east.

TIME OF YEAR Seeds and roots in the fall

RANGE Throughout North America

ENVIRONMENT Prefers rich soil and good watering

METHOD OF PREPARATION Seeds raw or roasted, roots raw or roasted. Seed oil has a wide variety of uses and applications. Young blossoms boiled or baked; leaves used mostly for tea

Nutrition Notes

Seeds, per 100 grams

582 calories, 49.8 g fat, 24.07 g carbohydrates, 19.3 g protein, 11.1 g fiber

Vitamin A (as beta-carotene)	17 IU (5 mcg RE)
Vitamin B1 (thiamine)	0.11 mg
Vitamin B2 (riboflavin)	0.25 mg
Vitamin B3 (niacin)	7.04 mg
Vitamin B6 (pyridoxine)	0.8 mg
Vitamin B9 (folic acid)	237 mcg
Vitamin C	1.4 mg
Vitamin E	26.1 mg
Vitamin K	2.7 mcg
Calcium	70 mg
Copper	1.83 mg
Iron	3.8 mg
Magnesium	129 mg
Phosphorus	1155 mg
Potassium	850 mg
Selenium	70.3 mcg
Sodium	3 mg
Zinc	5.29 mg
Choline	55.1 mg

Green Deane's Notes

Although sunflowers sometimes have a head a foot across, they are not the largest native blossom in North America—that distinction goes to the much

smaller American lotus. Nonetheless, sunflowers *look* like they should be the largest flowers in North America, certainly the tallest.

Sunflowers have been under cultivation more than 4,000 years, starting perhaps in central Mexico and moving northward and now throughout North America. While the seeds are edible, the roots of some sunflowers are also edible.

The United States is the third-largest commercial producer of sunflowers, behind Russia and Argentina. Thus you will find two kinds of wild sunflowers: those that escaped cultivation long ago, reverting back to smaller forms, and some that escaped last season still big and brassy.

Sunflowers have many uses. The seeds can be roasted and eaten as a snack; raw seeds can be ground into a meal to thicken soups and stews. The roasted hulls can be used to make a brew similar to coffee. Dye can be extracted from hulls and petals, and face paint can be made from dried petals mixed with pollen. Dried stalks can also be used to build shelters. The oil is used for food, medicine, and cosmetics; you can even extract your own oil with an expeller.

Two main types of sunflowers are grown in the United States, oilseed and confectionery. Oilseed sunflower seeds are small and black, with a high oil content; they are processed into oil and meal. Confectionery seeds are large with black-and-white stripes and are roasted for snacks and breads. Sunflower seeds are high in fat, nevertheless, they're best as an occasional indulgence.

Helianthus strumosus, like its cousin the Jerusalem artichoke (see [page 168](#)), has an edible root. You can tell *H. strumosus* from other sunflowers by a stem that is very branched; it also has a waxy layer that rubs very easily. Its leaves are lighter colored, hence its common name, Pale-Leaved Woodland Sunflower. It is found throughout eastern North America.

Be careful where you collect your wild sunflowers—they absorb toxins in the soil. In fact, they were used after the Chernobyl nuclear accident to clean the ground. Nuclear accidents aside, today sunflowers are the national flower of Ukraine.

Sweetbay

Magnolia virginiana

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES No known safety issues

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Tree up to 90 feet tall with an open crown of sparse branches. The farther north the tree, the smaller it is. Leaves simple, alternate, oval to oblong, 4–6 inches long, smooth and shiny green on top, white below. Bark gray-brown, smooth, and tight. The nonedible fruit, pinkish red when mature, is an aggregate that releases many flat, oval red seeds.

TIME OF YEAR Year-round

RANGE Massachusetts south to Florida and west to Texas; most common in Alabama, Florida, Georgia, and South Carolina

ENVIRONMENT Swampy areas with wet soils, along streams and ponds

METHOD OF PREPARATION Leaves used to make a tea or used like bay leaf to flavor soups and stews or make a marinade

Green Deane's Notes

Let's say you want to trap a beaver. First you need a trap, but then you need to bait it. What to use? Sweetbay, or *Magnolia virginiana*.

Beavers find the fleshy roots of sweetbay irresistible, a preference that was not missed by early colonists to North America. Deer and cattle also like the leaves and twigs; squirrels, White-Footed Mice, turkeys, quails, and songbirds like the fruit. Humans make a tea from its leaves and use them to flavor soups and stews.

Among foragers, sweetbay leaves are considered slightly inferior to those of persea (see [page 223](#)) in flavor, though they are used in the same ways. While persea has a more complex flavor profile, sweetbay appeals more to the nose with a hint of vanilla. It is also a larger, more attractive tree. Plus, sweetbay is much easier to identify than persea—the lance-shaped leaves are a rich green on top and a solid silver/white on the bottom. When the

wind blows, the tree flashes a handsome metallic sheen. That glimmer is caused by minute white hairs on the young leaves, which can be rubbed off.

When it comes to nonfood uses, the aromatic wood is soft, even-grained, and very easy to work with. Besides trapping beavers, it's used for veneer, boxes, containers, tool handles, furniture, lumber, and plywood.

Two other magnolias are worth mentioning: *M. hypoleuca* and *M. kobus*. The young leaves and flower buds of *M. hypoleuca* are boiled and eaten as a vegetable. Older leaves are dried, then sprinkled on food as a flavoring. Whole dried leaves can be filled like small boats with food, then grilled; leaves used this way are not eaten, but they impart their flavor to the food cooked in them. The flowers and buds of *M. kobus* are also boiled and eaten. Older leaves are eaten or used to make a tea. The leaves are also dried and powdered and used as a seasoning.

Sweetclover

Melilotus officinalis

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES Avoid plants that are moldy—the mold contains a toxic substance that can cause uncontrolled bleeding. Eating too much sweetclover can make you sick to your stomach, so use it carefully and sparingly. Some people report getting a headache when they smell the plant.

NATIVE STATUS Native to Europe and Asia; introduced in the US in the 1600s



Green Deane's Itemized Plant Profile

IDENTIFICATION Annual or biennial plant 2–5 feet tall, flowers floppy, 0.125 inch long, white or yellow, branching occasionally, often lanky. Light-green stems smooth, round or furrowed on all sides. Leaves alternate, trifoliate, sparsely distributed along the stems, petioles (leaf stem) up to 1 inch long. Grayish leaflets to 1 inch long and 0.3 inch across, hairless, toothy along the upper margins, oblong or oblong-ovate; small, narrow stipules at the base of each trifoliate leaf's petiole. Middle leaflet has longest petiole, side leaflets nearly sessile.

TIME OF YEAR Flowers summer through early fall

RANGE All over the US

ENVIRONMENT Roadsides, waste places, vacant lots, lightly wooded areas, weed meadows

METHOD OF PREPARATION Leaves raw in moderation in salads, seeds used as a spice. The whole plant can also be dried and used for tea.

Green Deane's Notes

Over the first 30 years or so of the 20th century, cattle farmers often found their cows dead in a pool of blood after they had eaten spoiled sweetclover hay. Frank W. Schofield, a Canadian veterinarian, described “Sweet Clover Disease” in 1924, but there was no explanation for it.

In February 1932, Ed Carlson, a farmer from Deer Park, Wisconsin, took one dead heifer, a bucketful of still-unclothed blood, and 100 pounds of old sweetclover to the University of Wisconsin looking for answers. It was the Great Depression, and Carlson couldn't afford the loss of his heifers—50% of his stock then—or even the hay. Karl Paul Link, a professor of agriculture with a specialty in biochemistry, agreed to research the issue.

With the help of PhD students Harold Campbell, Ralph Overman, Charles Huebner, and (later Nobel Prize winner) Mark Stahmann, Link discovered a substance called coumarin in sweetclover. He also discovered that when the plant gets moldy, the coumarin (which gives sweetclover its characteristic vanilla-like scent) reacts with the mold to form an anticoagulant called dicoumarol—this is the chemical that was killing livestock. Following Link's discovery, farmers began taking steps to reduce their cattle's consumption of moldy sweetclover hay.

More than a decade later, Link went on a six-month sabbatical to a sanitarium to recover from a bout of tuberculosis. While there, he read

about the problem of rodent control, and he hit upon the idea of using coumarin to kill rats. In 1947 he developed and patented warfarin, a coumarin derivative later approved to treat blood clots in humans under the brand name Coumadin. (The *warf-* in *warfarin* came from the Wisconsin Alumni Research Foundation [WARF], which funded his work. In time he also gave them the patent.) The antidote for warfarin, by the way, is vitamin K, which can be given by a doctor or vet or can also be found in foods such as leafy vegetables, cauliflower, broccoli, and green tea.

So what of Sweetclover as a forageable? The young leaves can be eaten raw, preferably before the plant blossoms. Bitter and aromatic, they're usually used as flavoring in salads. When thoroughly dried, the whole plant can be used to make a tea with a hint of vanilla. The seeds can be used as a spice.

Sweetgum

Liquidambar styraciflua

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES See preparation tips below.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Medium-size to large tree growing to 65–155 feet, with a trunk up to 6 feet in diameter. Alternate leaves glossy, dark green, turning brilliant orange, red, and purple in the autumn; usually have five (sometimes three or seven) sharply pointed, palmate lobes. Fruit compound, round, prickly, 40–60 capsules, each with one or two seeds.

TIME OF YEAR Flowers in late spring, fruits in summer, persists in winter.

RANGE Southern New England to Florida west to the middle US

ENVIRONMENT Prefers deep, moist bottomland and full sun

METHOD OF PREPARATION When slashed to the cambium, sap will leak out and harden. The resulting gum can be chewed. Unripe fruit can be crushed and soaked in alcohol to make a medicinal tincture. The bark can be used to make a medicinal tea.

Green Deane's Notes

Sweetgum is the sandspur of the forest—the prickly seedpods hurt to step on barefoot and have caused many a forager to twist an ankle. I think it's time to rehabilitate the plant's reputation.

The only edible part of the tree is the dried sap, which makes a fragrant, bitter chewing gum. Despite its name, though, the gum is not sweet. It's called sweetgum to distinguish it from a different species, the blackgum (*Nyssa sylvatica*), which is extremely sour and bitter. So you could say it's sweet by comparison.

In his book *The Encyclopedia of Edible Plants of North America*, Dr. François Couplan states that the gum “has antiseptic qualities.” That would likely be the extent of our interest in sweetgum were it not for influenza and the leading treatment for it, Tamiflu.

Tamiflu (oseltamivir phosphate) is made from the seedpods of star anise (*Illicium verum*), a tree native to China. The key ingredient is shikimic acid. A shortage of star anise led folks to look elsewhere for shikimic acid, and they found it in pine needles and infertile sweetgum seeds. (Fertile seeds are black with wings on either side; infertile seeds are yellow and wingless.) Not surprisingly, sweetgum tea has a history as a folk remedy for the flu, and the Cherokee made a tea out of the bark.

So how might shikimic acid work? To reproduce, the flu virus needs to break out of the cells it infects. A protein makes that possible. It is believed that shikimic acid can inhibit this protein and thus reproduction of the virus, which shortens the duration of the infection and lessens symptoms. One

study, not referring to shikimic acid, says that “[S]weetgum extracts have also been shown to directly inhibit the H1N1 virus by inhibiting the neuraminidase activity (NA) of the virus.” Neuraminidase, the aforementioned protein, is also the target for oseltamivir and other antiviral drugs.

As for the preparation, dosage, and use, consult a doctor or herbalist. If you wish to explore the medicinal aspects of the sweetgum further, Google “American Storax.”

Two more tidbits: The sap is also used to add flavor to smoking tobacco and is also available at the pharmacy as an ingredient in tincture of benzoin, an over-the-counter treatment for canker sores.

Sweet Potato Leaves

Ipomoea batatas

NOTABLE NUTRIENTS OR USES Iron, calcium, magnesium, vitamin C, manganese

SAFETY NOTES See detailed harvesting notes below.

NATIVE STATUS Native to Central and South America



Nutrition Notes

Per 100 grams

35 calories, 0.3 g fat, 22.7 g carbohydrates, 4 g protein, 2 g fiber

Vitamin A (as beta-carotene)	2230 IU (670 mcg RE)
Vitamin C	15.2 mg
Calcium	28.44 mg
Iron	16 mg
Magnesium	340 mg
Manganese	4.65 mg
Potassium	4.05 mg
Sodium	4.23 mg

Zinc

0.08 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Herbaceous perennial vine with stems usually crawling on the ground. Leaves alternate, heart- or oval-shaped, 2–5 inches long, green or purplish, smooth or serrated, leaf stalk 5–20 inches long. Flowers lavender to purple, funnel-shaped, open before sunrise and stay open for a few hours; sepals elongated, spiky.

TIME OF YEAR Generally late August to early November

RANGE New Jersey south to Georgia and west to Texas

ENVIRONMENT Best in hot, humid climates with plenty of rain; tolerates poor soils

METHOD OF PREPARATION Cooked as potherb (boiled, sautéed, or stir-fried); edible raw but strong-tasting

Green Deane's Notes

Sweet Potato Leaves are common fare in various countries; they cook up like spinach and other leafy greens. Some other members of the morning glory family (Convulvulaceae) have edible leaves as well (see [page 198](#)); Water Spinach (*I. aquatica*) comes to mind. I learned long ago to sort this family for edibility by the color and size of the blossoms. Generally, family members with large white blossoms or white blossoms with ruby throats have something edible—it varies from species to species, whether the leaves, the root, or the shoots. Species with red or pink blossoms are iffy, sometimes yes and sometimes no. Edibility varies from not at all to a famine food or for only short-time use. Blue-blossomed species are just pretty and can have seeds that make you ill, so leave those alone.

Swinecress

Coronopus spp.

NOTABLE NUTRIENTS OR USES Protein, calcium, phosphorus, sodium, iron

SAFETY NOTES No known safety issues

NATIVE STATUS *Coronopus didymus*, native to South America; *C. squamatus*, native to Europe; introduced nearly worldwide



Green Deane's Itemized Plant Profile

IDENTIFICATION *Coronopus didymus*, annual or winter annual, low, spreading, smooth to mildly hairy, stems freely branching, low-growing with upward tips, many leaves ovate to oblong, pinnatifid, segments narrow, dentate or incised, many racemes, lots of white-petaled flowers. Fruit shorter than stalks, smooth seeds in two inflated, rounded sections. *C. squamatus* similar but more leafy, basal leaves obvate to oblanceolate, very condensed flowers. Seeds much rougher than those of *C. didymus*.

Nutrition Notes: *C. didymus**

Per 100 grams

calories NA, 1 g fat, 87 g carbohydrates, 2.6 g protein, fiber NA

Calcium	0.08–0.18 g
Copper	0.2–0.26 mg
Iron	11.43–15.11 mg
Manganese	0.58–0.86 mg
Phosphorus	0.06–0.08 g
Sodium	0.01–0.03 g

*Ranges based on three samples in a 1944 study

TIME OF YEAR In cooler areas, *C. didymus* flowers spring to midsummer. *C. squamatus* flowers in summer. In warm areas, swinecress (a winter annual) is easily found December to January.

RANGE *C. didymus*, eastern US west to California and north to Washington. *C. squamatus*, Pennsylvania, New York, New Jersey, Connecticut, and Rhode Island; Alabama, Tennessee, and Louisiana; and Arizona, California, and Oregon

ENVIRONMENT Old fields, roadsides, along streets, vacant lots, disturbed sites, mowed lawns, often locally abundant. I find it often around the edges of lawns and/or mowed areas with fences to the ground.

METHOD OF PREPARATION Can be eaten raw; most people boil leaves and stems in several changes of water as a potherb. (I never cook it myself.) Can be used to stuff other foods, such as fish or flank steak. Roots can be cooked or ground up and mixed with vinegar to be used like a horseradish.

Green Deane's Notes

Opinions are mixed on swinecress. I think it's a nice walkabout nibble and potherb. I often find it in lawns in the cooler months of the year and take it home with me. Others think it stinks nauseatingly and you should put a

clothespin on your nose while boiling it—many times. Now you know the spectrum of gustatory opinions.

There are actually two species of swinecress in North America, neither of them native. *Coronopus didymus* (also known as Lesser Swinecress) probably came from South America, while *C. squamatus* (formerly *C. procumbens*) came from Europe. Both have a moderate- to-strong mustard flavor and are used in the same ways. The two species' main separating distinction is that the fruit/seed of the *C. squamatus* is lumpy and has ridges, whereas the *C. didymus* tends to be smooth.

When swinecress lives where it is walked on or mowed, it becomes a tough little contender. But provided with all of the things most plants like, such as sun, water, and good soil—and as long as it isn't trod upon—it can grow to more than a foot high. Oddly, the plant absorbs salt in its roots, up to 17%. Those roots can be cooked or ground up and mixed with vinegar for a type of horseradish. *Note:* Don't add salt to the root until you taste it.

There are no poisonous members of the mustard family, just pungent. And that is where this micro-mustard excels: When raw it is mustardy, but mildly to moderately so; as you chew, however, the flavor grows more intense and picks up some heat. The amount of flavor far exceeds the amount eaten—so approach conservatively.

Sword Fern (Boston Fern)

Nephrolepis cordifolia

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES See identification tips below.

NATIVE STATUS Native to Australia and the Himalayas; first found in the US in the early 1930s

Green Deane's Itemized Plant Profile

IDENTIFICATION Medium-size, medium-green, pinnate leaves taper at both ends, producing fuzzy round tubers belowground. Fertile and sterile fronds similar, to 3 feet long and 3 inches wide; petioles to 8 inches long, 40–100 leaflets on each side, oblong-lanceolate with a heart-shaped lobe at stem end of leaf; leaflet entire to slightly toothed, underside spore packets kidney-shaped.

TIME OF YEAR Tubers available year-round. The plant produces a horizontal root (rhizome). Branching off the rhizome are wiry roots, or stolons. Growing on the stolons will be the tubers.

RANGE Florida, Georgia, and Alabama

ENVIRONMENT Shady areas, lawns, waste ground, limestone ledges, wet places, roadsides, in palm trees

METHOD OF PREPARATION Tubers eaten raw and out of hand or roasted. If you roast large ones in a slow oven, they turn into sweet, chewy lumps. Small ones keep their shape but turn to a powder inside that tastes like coffee.



Green Deane's Notes

Many years ago, I had a yard full of nonedible ferns. Because I enjoy fiddleheads, I found that irritating. That irritation in time led me to buy a fern book to seek out more fiddleheads than I already knew. To make sure I could identify them well, I started with the ones in my yard.

Nephrolepis cordifolia was first found growing in the US beside a road in Sumter County, Florida, in 1933. As this species doesn't produce much of an edible fiddlehead, I ignored it for some eight years as it spread, covering half my backyard. The identification was rather easy: Of the five *Nephrolepis* species in the state, *cordifolia* is the only one with marble-size tubers growing off its roots. In fact, when I wanted to move ferns to a new spot, I often planted the tubers. I thought nothing of them.

My research led me to a 2008 scientific paper on the plant from Nepal. The team not only tested the plant for nutritional content but also reported that children there eat the tubers raw all the time. The team recommended that the tubers be investigated as a potential commercial crop.

After rechecking my plants, I suddenly realized I had thousands of ferns with edible tubers. This was a win-win in disguise. *N. cordifolia* is on Florida's plant-pest list—the only fern of about 100 to make it. The state doesn't like it because it's squeezing out the native *N. exaltata*, which is a commercial product.

While many fern species have usable rhizomes, only two *Nephrolepis* have tubers—*N. cordifolia* and *N. undulata*—and both are edible. Gently pull out the fern's root mass and look for the tubers. *N. cordifolia* is often sold commercially as *N. exaltata* because folks don't know the difference.

The tubers of *N. cordifolia* contain 13.42% carbohydrates, 1.34% protein, 1.25% starch, 14.88% crude fiber, 6.53% ash, 0.75% calcium, and 0.06% phosphorus. They can range in color from cream to yellow to dark tan or brown. To me they taste similar to Jerusalem artichokes (see [page 168](#)), with the same crunch plus a varying amount of astringency, water, and potato-like earthy aroma. (Light-colored tubers are less astringent than old, dark-brown ones.) The fern is often an epiphyte, meaning it grows on other plants; the tubers can store water for dry spells.

Other fern species with reportedly edible tubers include *Angiopteris evecta*, *Diplazium esculentum*, *Cyathea medullaris*, *Pteris esculenta*, *Gleichenia dichotoma*, and *Marattia alata*. *Pteris aquilinum* and *Aspidium filix* tubers have been used to make beer.

Sycamore

Platanus spp.

NOTABLE NUTRIENTS OR USES No nutritional information available; protein, calcium, magnesium, phosphorus

SAFETY NOTES No known safety issues

NATIVE STATUS Introduced and/or native



IDENTIFICATION Tall tree resembling a maple with mottled bark, leaves palmate, large, 8 inches wide and long (or more) with three lobes, glossy green on top, paler underneath. Nonedible fruit a brown cluster.

TIME OF YEAR Sap availability depends on location, year-round in warm areas.

RANGE *Platanus occidentalis* (American Sycamore), eastern and central US. Another species, *P. racemosa*, grows exclusively in California and northern Baja California, Mexico.

ENVIRONMENT Sandy loams or loams with a good supply of groundwater, typically on the edges of lakes and streams

METHOD OF PREPARATION The American Sycamore can be tapped like a maple. When reduced to a syrup, the sap tastes like butterscotch. The bark chips and root of the California sycamore (*P. racemosa*) can be steeped in hot water to make a tea.

Green Deane's Notes

Sycamores (*Platanus occidentalis*) get a bad rap. Though they grow big and showy, landscapers don't like them because they can carry a lot of tree diseases. Homeowners don't like them because they shed piles of maple-like leaves and disrupt underground structures. Woodworkers don't care for the wood because it tends to hold water and twist when it dries—but that's why we foragers like it.

The sycamore is full of drinkable sap, which is a source of water in the wild. The sap can also provide a maple-like syrup (which actually tastes like butterscotch), but that involves boiling many gallons of sap.

Like maple leaves, sycamore leaves tend to be bitter and tough—think of them as famine food. That said, we do have a nutritional profile based on their use as goat feed. Sycamore leaves are 25% dry matter, 13.7% crude

protein, 67% digestible nutrients, 18.2% lignin, 2.67 % calcium, 0.38% magnesium, 0.12% phosphorus, and 1.65% potassium. We also know from a 1950 study that the leaves contain flavonoids.

For the forager—or the bushcrafter—another benefit of the sycamore is its light-colored wood, which can be used to make utensils such as wooden spoons, forks, or skewers. Historically, it was made into food boxes, as well as fruit and vegetable baskets. Other early uses included barber poles, wooden washing machines, lard pails, Saratoga trunks, piano and organ cases, phonograph boxes, and paneling for Pullman train cars. It has been used to make butcher blocks for many years because it's hard to split, as well as flooring, handles, and pallets.

Sycamores can grow so large that they have hollow trunks, and many a settler sought long-term shelter inside a sycamore. At one time two brothers lived for three years inside the hollow trunk of an American Sycamore. That's not hard to believe, given the size of the US's champion sycamore tree. It's in Jeromesville, Ohio, and is nearly 50 feet around at the base (582 inches at 4.5 feet high). It is 129 feet tall and has a crown spread of 105 feet.

Sycamores are sometimes confused with several other trees in the same family that are similar in appearance. If the tree produces individual seedpods, it's a sycamore. If the seedpods occur in pairs, it's a London plane (*Platanus × acerifolia*), which is a hybrid of an American sycamore and an Oriental plane (*P. orientalis*). If the tree has clusters of three to five seedpods hanging like beads, it's an Oriental plane.

Tape Seagrass

Enhalus acoroides

NOTABLE NUTRIENTS OR USES No nutritional information available; protein, fiber, calcium, iron

SAFETY NOTES No known safety issues

NATIVE STATUS Native to coastal waters of the Indian and Western Pacific Oceans



Green Deane's Itemized Plant Profile

IDENTIFICATION Leaves dark green, thick, long, and ribbon-like, with rolled leaf margins and many parallel veins and air spaces. Rhizomes thick with long, black bristles and cordlike roots. Fruits round and large with dark, ribbed skin and six or seven white seeds. Plant is monoecious, with tiny white clusters of male flowers growing from a cup-shaped inflorescence and larger, white, three-petaled female flowers growing from a long, stalklike stem.

TIME OF YEAR Flowers year-round

RANGE Papua New Guinea west to the Red Sea and south to northern Mozambique in the Indian Ocean; range includes the US territories of Guam and the Mariana Islands

ENVIRONMENT Littoral land, shore exposed at low tide often adjacent to mangrove forests

METHOD OF PREPARATION Seeds raw and out of hand or boiled or roasted; cooked, they have a chestnut-like flavor. (The plant itself smells sulfurous.) If the plant is allowed to rot, a strong, saltwater-resistant fiber can be made from the remains.

Green Deane's Notes

Where Tape Seagrass grows, it provides a habitat for numerous sea creatures, in addition to food for humans. Its method of reproduction is a bit odd. Male flowers, looking like bits of Styrofoam, surface, aggregate, then float off looking for a receptive female blossom.

Tape Seagrass is a littoral species; that is, it lives on mudflats, spending part of its life submerged and part out of water. This doesn't necessarily mean that the seeds—the edible part—are easy to collect. I dug many clams when young, and slogging across mudflats for food is hard, exhausting, smelly work.

When the ripe fruit bursts, the seeds are released and float for only about 5 hours before they start to sink. The seeds are estimated to be able to travel 25 miles. When the seeds settle, roots develop rapidly and the seeds germinate quickly.

The seeds contain 80.48% carbohydrates, 9.61% protein, 2.38% fiber, and 0.76% fat. Per 100 grams dried, they have 225.8 mg of calcium, 21.8 mg of phosphorus, and 5.7 mg of iron. The seedpods are 42.77% carbohydrates,

9.47% protein, 15.48% fiber, and 0.69% fat. Per 100 grams dried, they have 456.4 mg of calcium, 93 mg of phosphorus, and 5.69 mg of iron. Notably, unlike many marine plants, Tape Seagrass contains virtually no iodine.

Tape Seagrass is a monotypic genus, that is, there is only one species in its genus: *Enhalus acoroides*. (In contrast, some seaweed genera have hundreds of species, if not thousands. Worldwide, there are some 72 species of seagrass, which is the only flowering plant of marine environments.) Where it grows, it acts as a wave breaker, protects some beaches, and is a preferred food of the dugong, the only living relative of the manatee. It also oxygenates the water and is good at carbon sequestration, thus helping reduce the effects of global warming.

Tea

Camellia sinensis

NOTABLE NUTRIENTS OR USES No nutritional information available; potassium, calcium, iron, manganese, caffeine

SAFETY NOTES See notes below about potential interference with warfarin.

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Evergreen, medium-size woody shrub to 6 feet tall. Leaves oval and pointed at the tips, usually 2–4 inches long, shiny, dark green, margins finely dentate (serrated). Flowers five-petaled, white, fragrant, up to 1.6 inches in diameter

TIME OF YEAR Depending on climate, tea leaves are picked three or four times a year between spring and fall.

RANGE USDA Hardiness Zones 7, 8, and 9

ENVIRONMENT Well-drained, sandy, slightly acidic soils

METHOD OF PREPARATION Aside from the typical use, you can eat the fresh or dried leaves and flowers in salads.

Green Deane's Notes

Commercial plants become escapees perhaps more often than not. A significant number of invasive species were intentionally introduced by governmental agencies—crabgrass comes to mind (see separate entry). The tea we drink is a commercial crop, an ornamental, *and* a weed.

Billions drink tea every day, and both the leaves and blossoms are edible, but what nutrients can one expect to find in a cup of tea or a salad of tea leaves? India, which has no small interest in the topic, has an answer. A study found that a 100-gram sample has 2,160 mg of potassium, 630 mg of phosphorus, 480 mg of calcium, 220 mg of magnesium, 18 mg of iron, 3.32 IU vitamin A (1 mcg RE), 10 grams of carbs, and (somewhat surprisingly) 14.8 grams of protein.

A second study in 2017 found much higher amounts of potassium—more than twice your daily need—along with much lower amounts of calcium. In this case, a 100-gram sample contained 7,262 mg of potassium, 18.88 mg of sodium, 5.73 mg of calcium, 4.40 mg of magnesium, 3.21 mg of copper, 1 mg of zinc, 5.60 mg of manganese, 1.74 mg of chromium, 0.23 mg of nickel, and 0.60 mg of iron.

We also know green tea is more nutritious than fermented black tea. For example, black tea has less calcium than green tea. Green tea also has more vitamin K per 100 grams than black tea: 1,428 mcg versus 262 mcg. (Vitamin K can reduce the anticoagulant effects of the drug warfarin—or, in theory, sweetclover; see [page 280](#).) Finally, green tea contains higher amounts of epigallocatechin-3-gallate, a powerful antioxidant and anti-inflammatory agent, than black tea.

A delicious dish incorporating tea is *lahpet thoke*, a traditional Burmese salad made from green tea leaves. Dried or fresh leaves are crushed and mixed with lime juice, chiles, chopped cabbage, garlic, and cilantro and allowed to ferment for a couple of days; then the mixture is tossed with shrimp, sesame seeds, peanuts, and shredded cabbage and drizzled with a dressing of lime juice, sugar, and fish sauce. I found that my pasta maker—the kind with rollers you hand-crank—was excellent at crushing tea leaves for the fermenting step. I just tightened the rollers and cranked them through.

Tiger Lily

Lilium lancifolium

NOTABLE NUTRIENTS OR USES Protein, carbohydrates, calcium, potassium, phosphorus

SAFETY NOTES Toxic to cats. If you suspect that your cat has eaten tiger lily, take the cat (and the plant) to a vet immediately.

NATIVE STATUS Native to China, Japan, Korea, and far eastern Russia; widely planted as an ornamental but also occurs as a garden escapee in the eastern US



Nutrition Notes

Flower powder, per 100 grams*

331 calories, 0 g fat, 67.5 g carbohydrates, 13.5 g protein, 7.5 g fiber

Vitamin C	16 mg
Calcium	275 mg
Iron	5.18 mg
Sodium	18 mg

*See Deane's Notes for information on other parts of the plant

Green Deane's Itemized Plant Profile

IDENTIFICATION Bulbs widely ovoid with large scales. Stems minutely woolly, purplish buds usually flat-sided, somewhat triangular in cross-section. Leaves scattered, horizontal, lanceolate, often narrowly so, drooping at tips; dark-purple axillary bulbils. Turban-shaped flowers drooping, not fragrant; sepals and petals curve back, orange with many purple-brown spots; stamens stick out, ends purplish.

TIME OF YEAR Late summer

RANGE Eastern US, including New England, along with parts of the Deep South

ENVIRONMENT Damp places in urban areas, along roadsides and railways, near buildings

METHOD OF PREPARATION Bulbs boiled, pickled, or used to make starch. Flowers, fresh and dried, used in soups, salads, omelets, and rice dishes. Scales cooked

Green Deane's Notes

The word *lily* causes more confusion than four letters should. There are true lilies, most of which aren't edible—and some of which are quite toxic. And there are plants people call lilies that aren't lilies at all, some toxic and others edible. The next layer of confusion arises from the fact that many people call many different plants by the same name, in this particular case, the tiger lily.

The tiger lily we're interested in for the moment is *Lilium lancifolium* (aka *L. tigrinum*), a native of eastern Asia but naturalized in the northeast quadrant of North America and a few other places as well. Most of the plant is edible by humans, but be aware that all parts cause kidney failure in cats

—even small amounts of the pollen are toxic. The bulbs taste like turnips or parsnips when cooked. The flower buds can be eaten raw or cooked.

We have three nutritional breakdowns for dried flowers (see box), bulbs, and scales (the outer layers of the bulbs). One hundred grams of *L. lancifolium* scales contain 6.81% starch, 7.06% nonstarch polysaccharides, 5.21% crude protein, 0.15% crude fat, and 21.9% carbohydrates. Minerals break down as follows: potassium, 752.4 mg; phosphorus, 142.3 mg; magnesium, 29.1 mg; calcium, 17.2 mg; sodium, 8.9 mg; iron, 2.1 mg; manganese, 0.66 mg; zinc, 0.45 mg; and copper, 0.20 mg.

While not a tiger lily, the bulbs of *L. brownii* are edible and widely sold as food in China. If we merge three studies, 100 grams have 100 calories, 38 grams of carbohydrates, 3 grams of protein, 1 gram of fiber, 6 mg of sodium, 17 mg of lipids, and 5% of your daily need in vitamin A. Flour made from *L. brownii* contains 58.7% carbs and 13.7% protein. The predominant sugar is glucose, 48.4%. The flour is also high in the amino acid arginine, which is beneficial to cardiovascular health.

Among the native lilies of North America, the cooked bulbs of the follow species can also be eaten by humans: *L. canadense* (now rare in some places), *L. columbianum*, *L. occidentale*, *L. pardalinum*, *L. parvum*, *L. philadelphicum*, and *L. superbum*. Another edible Asian lily is *L. bulbiferum*. (See [page 112](#) for entry on daylilies, which are part of the genus *Hemerocallis*.)

Tindora (Ivy Gourd)

Coccinia grandis

NOTABLE NUTRIENTS OR USES Vitamin A, vitamin C, calcium, phosphorus, iron; nutritional values vary depending on whether fruit is green, ripe, or dried

SAFETY NOTES No known safety issues

NATIVE STATUS Native to Africa and tropical Asia; considered a noxious weed in Hawaii



Nutrition Notes

Per 100 grams (data reflects multiple studies)

20 calories^{*}/40 calories^{**}, 0.2 g fat, 3g^{*}/8g^{**} carbohydrates, 1 g protein, 1.6g^{*}/2 g^{**} fiber

Vitamin A (as beta-carotene)	0 [*] /1400 IU (420 mcg RE) ^{**}
Vitamin B1 (thiamine)	0.07 mg
Vitamin B2 (riboflavin)	0.08 mg
Vitamin B3 (niacin)	0.7 mg
Vitamin C	1.4 mg
Calcium	25 mg [*] /40 mg ^{**}

Iron	0.9 mg
Phosphorus	30 mg
Potassium	80 mg
*Green **Ripe	

Green Deane's Itemized Plant Profile

IDENTIFICATION Tropical vine, stems mostly hairless, green and longitudinally ribbed when young, becoming white-spotted when older and eventually woody, tendrils simple, in the axils. Leaves alternate, simple, broad, ovate, five-lobed, heart-shaped, stem has three to eight glands near the base; inflorescence usually solitary with axillary flowers. Corolla deeply divided into five lobes. Three stamens, present as staminodes in female flowers. Fruit a smooth, striped green turning bright red, ovoid to ellipsoid, chunky, about 2 inches long.

TIME OF YEAR Can produce year-round

RANGE Florida, Hawaii, and Texas; probably present but unreported in other tropical areas

ENVIRONMENT Agricultural areas, natural forests, planted forests, disturbed and waste areas

METHOD OF PREPARATION Young leaves and slender tops of the stems cooked and eaten as a potherb; in soups; or as a side dish, often with rice. The young and tender green fruits are tart/bitter and eaten raw in salads or boiled, steamed, fried, added to dishes like curries and soups, or pickled. The ripe, scarlet fruit is fleshy, on the sweet side, and eaten raw; it can also be candied and made into wine. I use the green ones like cucumbers and fry the red ones. It is an extremely reliable food source, rarely bothered by disease or pests.

Green Deane's Notes

Tindora, or ivy gourd (*Coccinia grandis*), is native to Africa and Asia but has been carried to distant locations. It has been introduced as a food crop in several countries in Asia, as well as Australia, the Pacific Islands, Africa, the Caribbean, and the southern United States. In Hawaii, Tindora has been planted as a backyard food source that then escaped cultivation. (That's not easy, though: Root cuttings are more reliable than seeds.)

The plant in the lab has shown antioxidant, anti-triglyceride, and antibacterial activity and is useful in the treatment of liver disease. It has also been used to treat abscesses and high blood pressure.

There is no specific agreement on the nutritional breakdown of *C. grandis*—virtually every reference I've examined yields different data. There is, however, a possible explanation. Tindora is used when it is green like a cucumber and when it is red ripe like a sweet pepper. The stage at which you harvest and test it affects the nutritional results, particularly in terms of calories, carbohydrates, and vitamin A (as beta-carotene). Generally speaking, the green fruit has about half the calories and carbs of the ripe fruit, which contains much more beta-carotene than the green. With these things in mind, we can work out a general nutritional profile per 100 grams (see box). One report, however, gives a different mineral picture when it comes to the dried fruit (per 100 grams): calcium, 3,064 mg, magnesium, 433 mg; iron, 13 mg; manganese, 5.6 mg; zinc, 2.5 mg; and copper, 0.60 mg.

Trillium

Trillium spp.

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES Make sure your species is an edible one! See below.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Trilliums don't produce true leaves or stems. The "stem"—actually an extension of the rhizome—produces tiny, scalelike leaves. It has a single terminal blossom and leaves of three in a whorl.

TIME OF YEAR Spring (early in southern areas, later in northern areas)

RANGE Throughout the US, except Arizona, New Mexico, Utah, and Nevada

ENVIRONMENT Wet areas, gullies, streamsides, moist woods

METHOD OF PREPARATION Young leaves foraged before the plant blossoms can be eaten raw or cooked. The berries and rhizome are inedible. *Note:* These plants are often protected, so make sure of your local laws.

Green Deane's Notes

Every May Day (May 1), we kids would hang a May basket on our teacher, Arlene Tryon, and disappear off the school grounds. It was a tradition in the rural school: Fifty kids just took off at noon, no police were called (the schools didn't have phones anyway), no one was upset, and no one disappeared or was kidnapped. Some of us boys even managed to walk a couple of miles and climb to the top of Bradbury Mountain State Park—and without paying an entrance fee at that.

We had to cross a gully to hike to the state park, and in that gully grew trilliums and skunk cabbage (see [page 290](#)). Trilliums were kind to the nose, so I wasn't surprised to learn people ate them. The annual trek to the top of Bradbury Mountain fixed the date in my mind of the plant being ready to eat in southern Maine: May 1.

Young, unfolding trilliums are edible before flowering and are called "Much Hunger" by Mainers. They are a salad green and potherb with a nutty taste like raw sunflower seeds; after they flower, the edible parts are

bitter. Not all trilliums are edible, however—among the comestible species are *T. erectum*, *T. sessile*, and *T. grandiflorum*.

Tropical Almond

Terminalia catappa

NOTABLE NUTRIENTS OR USES Potassium, phosphorus, calcium, magnesium, fat (that is, the heart-healthy kind)

SAFETY NOTES See harvesting tips below.

NATIVE STATUS Native to Asia, Australia, the Pacific, Madagascar, and Seychelles; considered invasive in Florida and Hawaii

Green Deane's Itemized Plant Profile

IDENTIFICATION Deciduous, single-trunked tree to 80 feet tall (30–55 feet on average) and 18 inches through at the base. Tiers of nearly horizontal branches give the tree a pagoda-like look. Leaves short-stemmed, spirally clustered at the branch tips, obovate, up to 11 inches long and 6 inches wide, dark green above, paler beneath, leathery and glossy turning bright scarlet, dark red, dark purplish red, or yellow in midwinter. (In Hawaii, the tree is evergreen.) Flowers greenish white, very small, no petals but 10–12 conspicuous stamens, in slender spikes in the leaf axils. Fruit yellow at peak ripeness, 3 inches or more long, 2 inches or more wide, elliptical, more pointed at the end than at the base, slightly flattened, with a prominent keel around both sides and the tip. Skin smooth, waxy, and thin. Pulp juicy, whitish to pink or reddish, slightly sweet or acidic. Seed spindle-shaped with a thin brown covering



Nutrition Notes

Per 100 grams (pulp and seeds)

138 calories, 41.42 g fat, 21.67 g carbohydrates, 21.22 g protein, 12.2 g fiber

Vitamin B1 (thiamine)	0.2 mg
Vitamin B2 (riboflavin)	1.01 mg
Vitamin B3 (niacin)	3.4 mg
Vitamin B5 (pantothenic acid)	0.5 mg
Vitamin B6 (pyridoxine)	0.01 mg
Calcium	264 mg
Copper	1 mg
Iron	3.72 mg
Magnesium	268 mg
Manganese	2.3 mg
Phosphorus	484 mg
Potassium	705 mg
Selenium	0.25 mcg
Sodium	1 mg
Zinc	3.08 mg
Beta-carotene	1 mcg
Lutein and zeaxanthin	1 mcg

TIME OF YEAR Summer, winter, or nearly year-round, depending on location

RANGE Florida and Hawaii in the US; USDA Hardiness Zones 10 and 11 when cultivated

ENVIRONMENT Full sun to medium shade and sandy, loamy, or clayey, well-drained soils. Tolerant of wind, salt, and drought; likes being mulched and regularly fertilized. Does not tolerate freezes.

METHOD OF PREPARATION There can be a lot of variation regarding when fruit is edible and palatable out of hand, sometimes when younger and other times when older. Oil can be used for cooking or to make soap. Leaves can be used as plates or to wrap small amounts of food. Seeds have an almond or hazelnut flavor but can be hard to get out of the husks—that usually requires cracking them open with a rock or a hammer at the tip.

Green Deane's Notes

Tropical almond (*Terminalia catappa*) is not a true almond. Rather, the tree gets its common name from the seeds and seedpods, which resemble large almonds. Unlike true almonds, however, the outside of the fruit is also edible. The fruit goes from green to yellow to red, though “red” is closer to brown and when the fruit is beginning to rot.

The species is considered invasive because it likes coastal areas, and the seeds can float in the ocean for years and still be viable when they reach land. The fruit can also be a nuisance when it drops from the tree—it contains tannic acid and can stain cars, pavement, and sidewalks.

Although the fruit as a whole is quite nutritious (see box), the seeds are the true nutritional powerhouse. Per 100 grams, they contain 4.13% moisture, 23.78% protein, 4.94% fiber, 51.8% fat, 16.02% carbohydrates, and 548.78 calories. When it comes to minerals, the seeds have an astounding 9,280 mg of potassium, along with 827 mg of calcium, 799 mg of magnesium, and 29 mg of sodium. The oil is composed of 31% oleic acid, 29% linoleic acid, 35% palmitic acid, and 4% stearic acid.

Tropical almond also contains antioxidants such as quercetin and kamferol; carotenoids including violaxanthin, lutein, and zeaxanthin; and tannins such as punicalin, punicalagin, and tercatein (tannins have been shown to inhibit the growth of bacteria and lower cholesterol). The leaves and bark are astringent. The tree has myriad uses in folk medicine, including the treatment of cancer, sickle cell disorders, dysentery, cough, leprosy, nausea, diarrhea, intestinal parasites, eye problems, rheumatism, colic, liver disease, scabies, upset stomach, and thrush; it has also been used as a contraceptive. Some modern research suggests it might be useful in treating high blood pressure. Leaf extracts have been shown to have some antidiabetic and antioxidant activity. The leaves and bark can also be put in a fish tank to increase water acidity and reduce bacterial infections among the tank's inhabitants.

Tuberous Sweetpea (Earthnut Pea)

Lathyrus tuberosus

NOTABLE NUTRIENTS OR USES No nutritional information available; protein, carbohydrates

SAFETY NOTES The seeds of plants in the *Lathyrus* genus can be toxic in large amounts (see Deane's Notes).

NATIVE STATUS Native to Europe and west Asia; naturalized in the northern two-thirds of the US

Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial herb 12–32 inches high. Stem limp, sometimes climbing, bristly. Flowers irregular, rosy pink to crimson; lateral two petals form “wings,” lower two petals united to form a “keel,” corolla butterfly-shaped; 10 stamens, strong fragrance. Leaves alternate, stalked, elliptical-lanceolate, blunt, no teeth, bluish green. Fruit long, flat, brown pod with three to six seeds. Nut-size tubers can grow up to 16 inches deep.



TIME OF YEAR Flowers June to September, depending on climate, seeds in the fall, tubers in late fall or early spring.

RANGE USDA Hardiness Zones 5–9

ENVIRONMENT Likes limestone-rich soils, forests, hedgerows, roadsides, railway yards, wastelands, parks. Easily trellised as an ornamental. To cultivate, either plant the roots or use the seeds—soak the seeds overnight, then plant in spring. Develops rather deep roots in the wild; to avoid that problem under cultivation, plant in containers.

METHOD OF PREPARATION Roots boiled (for about 10 minutes) or roasted. Some people like to steam the flowers and eat them. The roots are also used to flavor some Scotch whiskies.

Green Deane's Notes

Legumes—or plants in the pea and bean family (Fabaceae)—are all over the foraging spectrum when it comes to edibility. Thus it is with *Lathyrus tuberosus*, aka Tuberous Sweetpea or Earthnut Pea: The seeds are toxic in quantity, but the crisp cooked roots are delicious, on par with sweet chestnuts. Raw, they have more of a pealike flavor.

Research shows that the tubers contain 20% protein (more than potatoes) and 20% carbohydrates. The vitamin C content, at 161 mg per 100 grams, is nearly three times your daily need. The leaves and stems aren't edible, but a study of those parts as animal feed found that they're high in potassium, calcium, phosphorus, and magnesium.

Some members of this large genus—White Pea (*Lathyrus sativus*), for example—contain a toxic amino acid in the seeds that can cause a nerve disease called lathyrism if eaten in large amounts. That translates to 30%–50% of one's diet, but caution is still advised. Also edible in moderation are the seeds and young pods of beach pea (*Lathyrus japonicus* ssp. *maritimus*). Note, however, that the seeds of *Lathyrus tuberosus* aren't edible. (They're no more toxic than the seeds of other species; they just don't taste good.)

Cultivated since the 1600s, the tubers of *Lathyrus tuberosus* were once a common food in Europe. They were sold in produce markets in France under the name *macusson*.

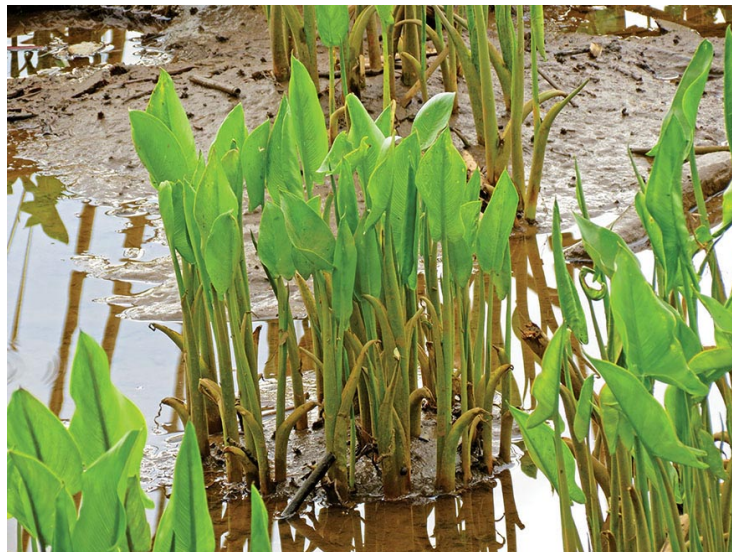
Tuckahoe (Arrow Arum)

Peltandra virginica

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES Do not eat the roots raw (see Deane's Notes). See preparation tips below.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial herb to 3 feet tall, growing from a large rhizome. Leaves up to 18 inches long and nearly 6 inches wide, green, fleshy, arrowhead-shaped, wavy-edged, with pronounced veins on the undersides. Rhizome grows horizontally about a foot down or more.

TIME OF YEAR Year-round but best in early spring (before seasonal growth) or fall (after seasonal growth)

RANGE East Texas to Florida, north to the Great Lakes and southern Maine; also established in California and Oregon

ENVIRONMENT Like cattails, can grow in large colonies in shallow or slow-moving waterways, such as bogs, swamps, and marshes; also grows in semidry, well-flooded areas. Full sun or shade.

METHOD OF PREPARATION Roots dried, roasted, or microwaved. Peel them before cooking, and always taste-test *twice* before use.

Green Deane's Notes

Tuckahoe (*Peltandra virginica*), also known as arrow arum, gets its name from Tuckahoe, New York—it was a staple food of Indigenous people who once lived in the area. In northern climes, it goes dormant in winter; in the South, it stays green unless there is a frost or freeze.

Note: The plant is toxic and contains microscopic, needle-shaped crystals of calcium oxalate. These crystals, or raphides, cause severe swelling and a burning sensation as they puncture the membranes of the lips, mouth, throat, and tongue. Swallowing too much of it can be fatal or damage your kidneys; fortunately, that rarely happens because of the burning sensation, which develops a minute or so after ingestion; plus, the raphides are destroyed by very long cooking or drying.

Tuckahoe is a living-in-the-wild survival food. Rid of the raphides, however, the tuckahoe is an excellent source of starch; American Indians dried and ground the roots for making breads and soups. William Bartram, the 18th-century botanist and adventurer, also reported that Indigenous tribes ate the long-boiled flowers and berries. What you won't learn from a history book is that the roots can be a chore to dig up, best accomplished with a shovel. If you're going to dig them up by hand, I recommend tough, elbow-length dishwashing gloves.

The best preparation method is to peel and slice the root and let it air-dry it for a few months. It can also be roasted in the oven for a day or more, although that's not cost-effective. Microwaving it shortens the drying time to edibility significantly: Nuke the slices for 1 minute–90 seconds, then let them sit until edible, which can be immediately to a few weeks. Another technique I've used is my solar oven—I peel the roots and put them in whole. About 10 hours of solar drying over two days makes them edible, albeit tough.

The edibility test after drying is the same as for jack-in-the-pulpit (see [page 166](#)): Chew a quarter-inch-square piece of root on *one side of your mouth* for a full minute, then spit it out and wait 10 minutes. If the calcium oxalate is still present, it will make that side of your mouth burn, along with your tongue and lips; the burning can last up to half an hour or so. (Lime juice can ease the oxalate burn; lemon juice will work in a pinch, but not as well.) If a small piece doesn't burn, try a bigger piece—if there's still no burn, you're good to go. You can eat the dried root pieces as is or grind them up as a flour. If you air-dry them, they can be used as a thickener; if you dry them at more than 150°F, they can be used as flour but not as a thickener, as the starch will have already broken down.

Tulip

Tulipa spp.

NOTABLE NUTRIENTS OR USES Starch

SAFETY NOTES Make sure to remove the yellow-green germ (flower bud) in the center of the bulb—it can cause indigestion severe enough to send you to the hospital. Also, some people are quite allergic to tulips, and they can cause a type of dermatitis called “tulip fingers,” which is common among florists. Finally, do not eat tulips if you suspect they have been sprayed with pesticides.

NATIVE STATUS Though tulips are most commonly associated with the Netherlands, they are native to western Asia and the Mediterranean basin. They were introduced in the US in the early 17th century.



Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial 4–28 inches tall, grows from a bulb, usually one flower per stem. The flower has three petals and three sepals that are often darker at the base. Blossoms occur in several colors except blue and have six distinct stamens. Seed capsules have disc-shaped seeds in two rows per chamber. Stem has few leaves, which are strap-shaped, waxy, alternate.

TIME OF YEAR Usually spring

RANGE USDA Hardiness Zones 3–7

ENVIRONMENT Well-drained soils, temperate climates with long, cool springs and early summers

METHOD OF PREPARATION Blossoms raw or cooked; bulbs cooked after removal of outer skin and inner flower bud

Green Deane's Notes

About 40 years ago, I was interviewing a businessman for a newspaper; he grew up in the Netherlands during WWII. Without thinking, I made the mistake of asking him if he ate tulip bulbs during the war. It was absolutely the wrong question. He was silent for a long time, and then quietly said “yes” and ended the interview. It’s one of those moments in life that you wish you could redo.

Subsistence on tulip bulbs is a common thread among accounts of life in Holland during the war. Perhaps the most famous account is that of Dutch-English actress Audrey Hepburn, who as a teenager lived in the town of Velp with her mother, aunt, and grandfather. After the Germans cut off food supplies to the Dutch during the winter of 1944–45, her family, like so many others, lived on make-do dishes made from tulip flour, and she almost died of malnutrition. The starvation Hepburn endured affected her for the rest of her life. She was reportedly never without food within arm’s reach.

No doubt there was some nutritional information on tulips during the 1940s, but it’s hard to find now. We know the bulbs are high in starchy carbs, and the edible blossoms contain at least some antioxidants, if their bright colors are any indication. The best we can estimate is that a 100-gram serving of tulip bulbs contains 148 calories, 3 grams of protein, 0.2 grams of fat, and 32 grams of carbohydrates.

The bulbs can be tough, which is why most recipes call for grating them before use. *Another important note:* In the center of every tulip bulb is a germ, usually yellow or green; you’ll have to cut the bulb in half to find it.

Get rid of that part because it will make you sick. It landed a friend of mine in the ER back in the 1970s. She told me that she and her mother had some extra bulbs and decided to cook them as is—they didn't know about removing the middle. Her life wasn't in danger, but the experience was painful.

Fortunately, tulip petals are more edible. The petals can be eaten raw or cooked, but cooking removes much of their color. They can have many flavors, from barely perceptible to tasting like beans, peas, or cucumbers. Pink, peach, and white blossoms are the sweetest, red and yellow the most flavorful. While you can use them to garnish salads, a more common use is to hold appetizers or dip. If you use the entire blossom, cut off the pistil and stamens from the center. The ends of the petals can be bitter, so cut those off as well when using them individually.

Tuliptree (Yellow Poplar)

Liriodendron tulipifera

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES See notes below.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Hardwood tree in the magnolia family, 80–100 feet tall, sometimes to 150 feet. Leaves alternate, light to dark green, simple, palmately veined, orbicular (circular and flat), four-lobed, 4–8 inches long, notched to flat top. Blossoms monoecious, perfect, showy, 2.5 inches long, resembling a large tulip but high in the tree, with yellow-green petals and an orange corolla. Fruit is conelike, 2 inches long, with many samaras; each samara is one-winged, 1.5 inches long, and curved upwards, resembling the front keel of a boat, maturing August to October and falling through late fall and winter. Base whorls of samaras persist into following spring and resemble wooden flowers high in the tree.

TIME OF YEAR Flowers late spring to early summer

RANGE Eastern North America, plus Texas

ENVIRONMENT Grows in a wide variety of soils. At the northern end of its range, it's usually found in valleys and stream bottoms at elevations below 1,000 feet. In southern Appalachia, it can grow on a variety of sites, including stream bottoms, coves, and moist slopes up to an elevation of about 4,500 feet. Toward the southern limit of the range, the species is usually confined to moist, well-drained stream bottoms.

METHOD OF PREPARATION Nectar sipped straight from the blossom or used to make honey. We don't eat the blossoms, although deer studies show they have good amounts of calcium, phosphorus, protein, and carbohydrates. Some references say tuliptree root was used as a flavoring to remove the bitterness from spruce beer.

Green Deane's Notes

Not every edible plant has to be a nutritional powerhouse. Some are "edible" by the barest of means. A good example is the tuliptree (*Liriodendron tulipifera*).

Some references say that Native Americans made honey from this tree. While it's definitely true that tuliptree honey is made today, it's doubtful that Indigenous people made it for two reasons. First, to be literal about it, people don't make honey, bees do. Second, honeybees aren't native to North America—they came with European settlers. So if Native Americans did make honey from tuliptrees, it would have to have been after colonization. That said, here's an explanation for the likely historical inaccuracy that fits nicely with our foraging interests.

For just a short time while the tree is blossoming, there is a small amount of very sweet nectar in each blossom. It is heavy and honey-flavored, and you can drink it directly from the blossom. Thus, what historians probably

meant wasn't that Indigenous people made honey from the tree, but rather that they collected its nectar. The nectar attracts not only people and bees but also hummingbirds and squirrels, and the blossoms are hosts for tiger swallowtail and spicebush swallowtail butterflies.

The tree is also called yellow poplar, tulip poplar, white poplar, whitewood, and Sap Poplar. The last name may have to do with the fact that the sap is drinkable as well as the nectar.

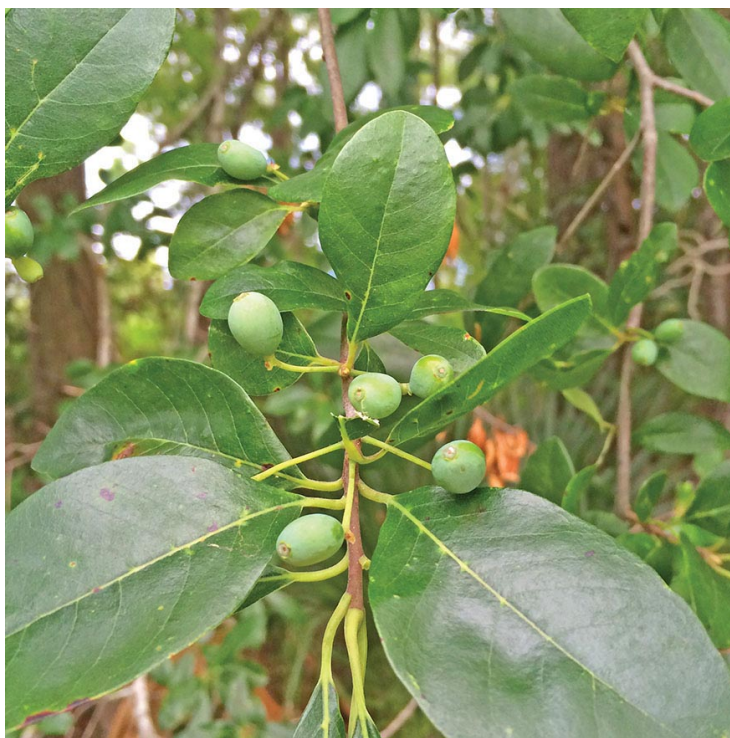
Tupelo

Nyssa spp.

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES See preparation notes below.

NATIVE STATUS Native and/or introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Except for *Nyssa ursine*, the tupelo is a tree with horizontal branches at right angles, leaves simple, alternate along the stem. Fruit round and dark blue to long and dark red to blue. Flowers small, in clusters, at the top of a long stalk. Species range from 5 to 100 feet tall. *N. ursine* is basically a shrub of limited distribution in a few counties of western Florida.

TIME OF YEAR Fruits usually in September or October, flowers in May or June

RANGE Generally eastern US; the Ogeechee Lime Tupelo (*N. ogeche*) grows in a crescent from Massachusetts into the South, west across the lower states, then up to southern Canada.

ENVIRONMENT Damp soils or in water

METHOD OF PREPARATION Tart fruit can be chewed like gum (without the stone, which has ridges), used in preserves, or juiced like lemons or limes; flowers used to make honey.

Green Deane's Notes

The black tupelo is an old friend from around ponds where I grew up, in Cumberland County, Maine, to around lakes in Florida. Members of the dogwood family, tupelos are famous for their honey. The center for tupelo honey production in the US is along the Apalachicola River in the Florida panhandle. Because of its rarity and singularity compared to other honeys, it is a million-dollar business.

Depending on who's doing the counting, there are 7 species in the *Nyssa* genus, 5 in North America, or 9–11 total. The most common species is *Nyssa sylvatica* (black tupelo), which is joined by *N. aquatica* (water tupelo) in the Southern states. Like many trees, the black tupelo, also called the black gum and the sour gum, barely makes it into the edible realm. The pulp of its fruit is technically edible but extremely sour, which is why it's usually used in sweetened preserves.

A variety of the black tupelo is called the Swamp Black Tupelo (*N. sylvatica* var. *biflora*), which grows in swamps along the East Coast and in the Deep South. However, some botanists think the swamp version is a different species and call it *N. biflora*. To complicate things, there's also *N. ursine*, or the Bear Tupelo, which some botanists consider a variety of *N.*

biflora. So in this paragraph there might be one species and two variations, two species and one variation, or three separate species.

Another edible species, the water tupelo, also called the cotton gum or swamp gum, grows in swamps of the southeastern and Gulf Coast states and in the Mississippi River valley to southern Illinois. It grows in pure stands or in with bald cypress and other swamp trees. The water tupelo can reach 100 feet tall, and its trunk is conspicuously enlarged at the base.

The Ogeechee Lime Tupelo (*N. ogeche*) is one of the rarer North American tupelos but has the largest range, from Cape Cod to the Deep South, across the southern US, and then up the West Coast to Washington State and southern Canada. It produces edible fruits. Often found in flooded sites in the southeastern US, the tree bears fruit that is very sour and has been used as a lime substitute. The Ogeechee Lime is the primary tupelo species used in honey production in Florida.

Usnea (Beard Lichen)

Usnea spp.

NOTABLE NUTRIENTS OR USES No nutritional information available; vitamin A, vitamin C, lutein

SAFETY NOTES Usnic acid can cause kidney and liver damage. Large quantities of Beard Lichen need to be soaked in several changes of water to remove the acid, or boiled with bicarbonate of soda or hardwood ashes.

NATIVE STATUS Native



Green Deane's Itemized Plant Profile

IDENTIFICATION Lichen resembling tufts of hair or a beard, short or long, grayish green, some species yellowish or red. Has unmistakable white core when main stem is pulled apart.

TIME OF YEAR Year-round

RANGE All of North America

ENVIRONMENT Prefers moist areas; also grows on hardwood trees, conifers, and fruitwoods. Very sensitive to sulfuric acid and won't grow in polluted areas.

METHOD OF PREPARATION Small amounts raw. Externally, can be applied to wounds. Soaking water can be used for irrigation.

Green Deane's Notes

I've been teaching about lichens for going on 20 years. There are some 20,000 lichen species, and only a few are toxic. Between eating a lichen you don't know and a mushroom you don't know, the lichen odds are strongly in your favor.

Lichens are algae and fungi married together. Among all lichens, *Usnea*, a genus also known as beard lichen, is the easiest to identify: Not only is it long and stringy, it's the only lichen on Earth with a white, elastic core. If you carefully pull the stem of a large piece, it will stretch apart and you'll see a little white thread inside.

But while *Usnea* is easy to ID, nutritional research on this genus is scarce. For example, there are dozens, if not scores of websites that say it's high in vitamin C, but none of those sites are associated with universities or medical research centers. Likewise, scouring scholarly literature produces little support for the assertion. Here's what we do know.

According to a 2019 Russian study, *U. subfloridana* had different levels of ascorbic acid (naturally occurring vitamin C) depending on where it grew in a geographical region: generally 130 mcg per gram but occasionally as much as 190 mcg per gram.

On the downside, *Usnea* also contains usnic acid, a chemical that can cause liver and kidney damage in large amounts. To use this lichen for food, you have to remove or at least reduce the acid. This can be accomplished by either soaking the lichen in water and changing the water a couple of times

a day for several days or by boiling the lichen with ash. I suspect, though, that such washing and/or boiling also reduces the ascorbic acid/vitamin C content.

So does *Usnea* have *any* saving nutritional graces? A 2020 Egyptian study says yes. It found that *Usnea* and other lichen genera are rich in carotenoids such as beta-carotene, lutein, astaxanthin, and mutatoxanthin, with total carotenoid content varying from 23.25–123.5 grams per gram dry weight. The article also notes, “Many vitamins are produced by lichens such as ascorbic acid, pantothenic acid, folic acid, nicotinic acid, riboflavin, biotin, thiamine, and alpha-tocopherol.” The specific amounts of these nutrients aren’t noted—but we at least know that vitamin C isn’t all there is to *Usnea*.

Viburnum

Viburnum spp.

NOTABLE NUTRIENTS OR USES:

SAFETY NOTES The raw fruit of *Viburnum opulus* (aka guelder rose or European Cranberrybush) is mildly toxic when eaten in large amounts and can cause stomach upset or diarrhea—cooking is recommended before eating.

NATIVE STATUS Introduced and native



Nutrition Notes: <i>V. edule</i>	
Fresh fruit, per 100 grams	
39 calories, 0.4 g fat, 9.4 g carbohydrates, 0.1 g protein, 3.8 g fiber	
Vitamin A	20 IU (6 mcg RE)
Vitamin C	13.4 mg
Calcium	24 mg
Copper	0.1 mg
Iron	0.3 mg

Magnesium	11 mg
Manganese	0.1 mg
Phosphorus	23 mg
Sodium	0.6 mg
Zinc	0.1 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Viburnum nudum*, deciduous shrub/small tree to 20 feet tall, leaves opposite, simple, lance-shaped to elliptical, 4–6 inches long, often shorter, upper surface dark green, shiny, lower surface covered with tiny glandular dots, leaf tips pinched to an abrupt point, edges usually toothless, occasionally finely crenated to serrated, slightly revolute. Flowers small, white, showy spreading clusters to 6 inches wide. Fruit ellipsoid, initially red to pink turning deep blue.

V. obovatum (Walter's Viburnum) has shorter leaves than *V. nudum*. Also, *V. nudum*'s petioles (leaf stalks) are winged, distinguishing it from the similar-looking Wax-Leaf Ligustrum (*Ligustrum japonicum*). Finally, while *V. nudum* and *Ilex decidua* are both commonly known as possumhaw, the former has opposite leaves and the latter has alternate leaves.

TIME OF YEAR Fruit in fall, usually September and October; flowers March and April

RANGE Eastern North America

ENVIRONMENT Swamps, bay heads, wet woodlands

METHOD OF PREPARATION Fruit raw or cooked, fruit leather. (Remove seeds before eating.) Viburnum berries usually store well.

Green Deane's Notes

The main problem with viburnums is that there are a lot of them, which makes it hard to choose which ones to use and write about. There are some

150 species of viburnums, perhaps a couple dozen more—botanists can't agree. Viburnums are found in temperate climates around the world; 18 are native to North America, plus there are at least 3 imports.

When it comes to edible species, here's a quick rundown. *V. alnifolium* (hobblebush): Ripe fruit is scarlet-colored, sweet, tasting like raisins or dates. The stone is large and the pulp thin. *V. cassinoides* (withe-rod, nannyberry, moosewood): fruit is light pink to purple, sweet, hangs on the tree deep into winter. An amber tea can be made from the dried leaves—first, you steam them over boiling water; when cool, roll them between your fingers, let stand overnight, and then dry in an oven. *V. edule* (squashberry, mooseberry): Fully ripe berries are bright red, slightly acidic, can be eaten raw or dried. *V. lentago* (wild raisin, sweet viburnum, sheepberry): Blue-black fruit is pulpy, sweet, juicy. *V. nudum* (Smooth Withe-rod, possumhaw): Apple-shaped fruits are 0.25 inch long, deep blue, sweet, eaten raw. *V. opulus* (guelder rose, European Cranberrybush), fruit bright red, sour, used like cranberries in making jelly, preserves, sauces, and wine (but see Safety Notes). *V. prunifolium* (black haw, stagbush): Fruit is bluish black; of varying size; sweet; eaten out of hand or used for jams, jelly, sauces, drinks, and the like. *V. setigerum* (Tea Viburnum): Leaves can be used as a substitute for tea. *V. trilobum* (highbush cranberry, see [page 158](#)): Red fruit can be used like cranberries in sauces, juice, jams, jellies, syrup, and wine; flowers can be added to pancake or cake batter, or battered and fried.

Several viburnums have medicinal properties. *V. opulus* and *V. prunifolium* contain scopolin, a natural sedative that was also found in a 2019 study to suppress certain immune cells believed to play a role in the development of multiple sclerosis. *V. prunifolium* also contains salicin, a precursor to aspirin. The Cherokee, Iroquois, Menomini, and Ojibwa used *V. acerifolium* to make an infusion for relieving cramps and colic. Iroquois women also used a decoction of *V. dentatum* twigs as a contraceptive.

Viburnums sometimes get confused with dogwoods, depending on the species and where you live. When the shrub is not in flower, crease a leaf across the middle and carefully tear it apart: If it's a dogwood leaf, there will be threadlike strings of latex between the two pieces. Viburnum leaves do not produce such strings.

Violet

Viola spp.

NOTABLE NUTRIENTS OR USES No nutritional information available; potassium, vitamin A, carotenoids

SAFETY NOTES The aboveground parts of plants in the genus *Viola* are edible, but a number of plants with *violet* in their common names (such as African violet) are not. Secondly, commercial growers tend to put a lot of chemicals on ornamental violets, so make sure that any violets you intend to eat haven't been sprayed with pesticides. Finally, go easy on eating yellow violet blossoms—too many can act as a laxative or a diuretic.

NATIVE STATUS Introduced and native

Green Deane's Itemized Plant Profile

IDENTIFICATION Annual or perennial flowering plants; blossoms blue, violet, yellow, white, and shades in between or multicolored. Five petals, with lowest petal heavily veined and curving back into a spur. Low-growing with a wide variety of leaf shapes. Sweet violets are the most aromatic, while wood violets tend to be larger.

TIME OF YEAR Sweet violets first in spring, then wood violets. In warmer climates, violets can blossom again in the fall.

RANGE Varies but generally the central to eastern US and Canada

ENVIRONMENT Moist, shaded areas, partial sun

METHOD OF PREPARATION Leaves raw, dried, or cooked. Blossoms raw or candied. Flavor is mild and leaves sticky.



Green Deane's Notes

There are more than 500 species in the genus *Viola*. As far as I know, all are edible (the aboveground parts, that is—don't eat the roots). From Johnny jump-ups (*Viola tricolor*, aka wild pansies)—my mother's favorite outdoor snack—to human-crafted Garden Pansies (*Viola* × *wittrockiana*), they all have potassium. In fact, in a blossom-to-blossom comparison with 11 other flowers, pansies contain 3,975 mg of potassium per kilogram, or 3.9 mg per gram—0.3 mg more than bananas, but with far fewer calories and carbohydrates.

A 2018 study found that pansies are also rich in antioxidants such as flavonoids and anthocyanins, including quercetin and apigenin. (Anthocyanins are what give plants their blue, red, and purple colors.) Total carotenoids in this study were 146 mcg per milligram.

Violet parts aboveground are consumer-friendly. The leaves can be dried to make a tea, used raw in salads, or cooked like spinach. The flowers can be eaten raw or candied. Violets can also be added to soups as a thickener. Native Americans soaked the roots—which aren't edible, by the way—with corn seeds as a pre-planting insecticide.

In addition, Indigenous people had various medicinal uses for some 17 species of violets. Surprisingly there is little record of them eating violets, with only three western tribes doing so; they did, however, use violets as poultices for headaches and boils; in infusions for dysentery, kidney problems, bladder issues, heart pain, colds, and coughs; and as a remedy for skin problems.

The state flower of Wisconsin, Rhode Island, Illinois, and New Jersey, violets generally belong to two large groups: sweet and wood. Sweet violets are strongly scented; wood violets are less so but are larger than the sweets.

Watercress

Nasturtium officinale

NOTABLE NUTRIENTS OR USES Beta-carotene, lutein and zeaxanthin, potassium, calcium, magnesium

SAFETY NOTES People who have delicate stomachs or who suffer from acidosis or heartburn should avoid eating. Excessive or prolonged consumption may also lead to cystitis or kidney problems and can cause miscarriages in pregnant women. Finally, watercress growing in water contaminated by animal waste (e.g., from livestock) may harbor bacteria or parasites that could make you sick—cooking it is a safer bet than eating it raw.

NATIVE STATUS Native to Europe and Asia; naturalized in all of North America; highly invasive



IDENTIFICATION Coarse, many-branched, pungent member of the mustard family with deeply divided compound leaves, low-growing, dense in suitable small waterways. Has the customary four-petaled white flower of plants in the family Brassicaceae, as well as seedpods on stems. Grows in the same location and at the same time of year as toxic water hemlock, so pick carefully.

TIME OF YEAR January to April in warmer areas, spring though fall in more temperate climates

RANGE Distributed worldwide; considered a noxious weed in 46 US states

ENVIRONMENT Clean, running water (but not rapids)

METHOD OF PREPARATION Raw or cooked as potherb; prepare like any mustard green

Nutrition Notes	
Per 100 grams	
11 calories, 0.1 g fat, 1.29 g carbohydrates, 2.3 g protein, 0.5 g fiber	
Vitamin A	533 IU (160 mcg RE)
Vitamin B1 (thiamine)	0.09 mg
Vitamin B2 (riboflavin)	0.12 mg
Vitamin B3 (niacin)	0.2 mg
Vitamin B6 (pyridoxine)	0.13 mg
Vitamin B9 (folic acid)	9 mcg
Vitamin C	43 mg
Vitamin E	1 mg
Vitamin K	250 mcg
Calcium	120 mg
Copper	0.08 mg
Iron	0.2 mg
Magnesium	21 mg
Phosphorus	60 mg
Potassium	330 mg
Selenium	0.9 mcg

Sodium	41 mg
Zinc	0.11 mg
Beta-carotene	1914 mcg
Choline	9 mg
Lutein and zeaxanthin	5767 mcg

Green Deane's Notes

Nasturtium officinale is one of the oldest leafy vegetables cultivated by man. I like the peppery taste, but I can't do more than taste it raw—I inherited a tender, temperamental tummy from one grandmother, so I have to cook it. I enjoy it with salt, pepper, olive oil, a sprinkle of garlic, and balsamic vinegar.

Francis Peyre Porcher, a physician and botanist, described watercress thus in the early 1860s: “Introduced. Ditches Florida. Northward. This plant came into pretty high favor about a century ago [1776] as a spring salad; and it soon obtained preference to all other spring salads on account of its agreeable, warm, bitter taste, and for sake of its purifying, antiscorbutic and diuretic properties. It was greedily gathered in all of its natural habitats within some miles of London for the supply of the London Market, and eventually became an object of regular, peculiar, and somewhat extensive cultivations.”

Watercress has a long history of medicinal use and was even popular in ancient times. The Greeks thought it was good for the brain and thinking, the Romans thought it could treat mental illness, and the Anglo-Saxons thought it could cure baldness. Modern studies have found that it is a mild stimulant, a source of phytochemicals, a diuretic, an expectorant, and a digestive aid. Research in Iran has shown it has antioxidant properties as well as the ability to lower cholesterol and triglycerides. Research in the United States suggests it may play a role in preventing or treating cancer.

There are actually several edible cresses in North America you might want to investigate. They include *Barbarea vulgaris*, *B. verna*, and *Arabis alpina*. (See separate entries on bitter cress, [page 70](#), and swinecress, [page 283](#).)

Water Hyacinth

Eichhornia crassipes, Pontederia crassipes

NOTABLE NUTRIENTS OR USES No nutritional information available; phosphorus, protein, beta-carotene, calcium, magnesium

SAFETY NOTES Some people are allergic to the stems and leaves. Avoid foraging from polluted areas.

NATIVE STATUS Native to South America; highly invasive



Green Deane's Itemized Plant Profile

IDENTIFICATION Floating aquatic herb in dense mats, with young plants attached to adults, submerged roots feathery. Leaves in rosettes; stems spongy, usually inflated or bulbous near base; leaf roundish or broadly elliptical, glossy, green. Flower a showy spike above rosette, lavender-blue, six petals, one with a yellow blotch. Fruit a three-celled capsule with many seeds. When foraging, the key things that distinguish it from similar-looking plants are the aforementioned bulbous stalks and the yellow spot on the upper lobe of the flower.

TIME OF YEAR Year-round in Florida, flowers in late summer or early fall farther north

RANGE Primarily the Southeast, California, and Washington State in the US. Though it does not generally like winter temperatures, it has also been found in protected areas in Illinois, New Jersey, Connecticut, New York, and even Canada.

ENVIRONMENT Lakes, streams, ponds, waterways, ditches, backwater areas, factory discharges. Does not like brackish water

METHOD OF PREPARATION Leaves boiled or fried, young bulbous bottoms fried, flowers boiled or candied

Green Deane's Notes

The State of Florida minces no words about water hyacinth: “*Eichhornia crassipes* is one of the worst weeds in the world—aquatic or terrestrial.” Whoever wrote this apparently never tried it deep-fried with butter or steamed with a bit of bacon grease!

Water hyacinth was introduced to the US in 1884 at an exposition in New Orleans—a Florida visitor to the exposition returned home with the plant and subsequently released it into the St. Johns River. Incredibly prolific, it can completely reproduce in as few as six days, and a single plant can multiply to cover 1 acre. If the State of Florida, for example, were to stop fighting it for one season, the weed would get the permanent upper hand in local waterways; in addition, it would make the Panama Canal impassible in three years if not kept under control.

On the upside, water hyacinth is a plentiful wild food. Some writers describe it as tasteless, but I find it close in texture and taste to collard greens when cooked. When deep-fried, the bottoms taste similar to pork rinds. The flowers are also edible. Two downsides to be aware of: raw water hyacinth gives a few people the itches, so cook it to be safe, and try a taste

first. Second, it absorbs and holds on to chemical pollutants, so collect it only from clean waters, and never collect it downstream of mines.

One can piece together some nutritional data from animal-feeding studies and research on eradicating or controlling the plant. An analysis of the leaves showed potassium, 44.5%; calcium, 19.5%; chloride, 16%; phosphorus, 6.5%; magnesium, 5%; silicon, 2%; sulfur, 1.5%; sodium, 1%; and manganese, 0.7%. A feeding trial with sheep reported the leaves contained 14.4% crude protein. According to another study, water hyacinth is 6.7% fiber and 5.5% lipids, the prime ones being palmitic acid in the leaves and linolenic and linoleic acid in the flowers. We also know water hyacinth contains beta-carotene, based on a 2004 patent application for extracting the nutrient from the plant.

From 1823–1883, water hyacinth was known scientifically as *Pontederia crassipes*; then it was renamed *Eichhornia crassipes*. A 2018 study recommended reverting to the original name. In the wild, the species is a breeding ground for many insects that fish eat. In addition to being a good cattle and chicken feed, it's been investigated as a quickly renewable biomass for making alternative fuels.

Wax Myrtle

Myrica cerifera

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES No known safety issues

NATIVE STATUS Native to North and Central America



Green Deane's Itemized Plant Profile

IDENTIFICATION Large shrub to small tree (depending on climate) to 10 or 15 feet tall, 6–9 feet across. Leaves olive to gray-green, alternate, simple, 0.5–1.5 inches long and 0.5 inch wide, characteristic bayberry scent (spicy, piney) when crushed. Leaves are smooth on top, hairy below, with orange scent glands on both sides. Berries in clusters attached to stems and branches, fall through winter, BB-size, light green to bluish white, strong bayberry scent

TIME OF YEAR Leaves year-round, berries in fall and winter

RANGE New Jersey to Florida, west to Arkansas and Texas, and south into Central America. Can be planted as far north as Rhode Island

ENVIRONMENT Grows under almost any conditions. Makes a nice bush for xeriscaping, as it needs no attention. Tolerant of salt spray and wind. First cultivated by European settlers in 1699

METHOD OF PREPARATION Leaves for seasoning, berries ground like pepper or boiled to collect wax. Root bark used in herbal medicine. Leaves have also been used for smoking fish and have been smoked like tobacco.

Green Deane's Notes

Wax myrtle, *Myrica cerifera*, is a veritable minimart of the forest. It can add spice to your cooking, and it can keep mosquitoes away. If you're a birder, tree swallows love it, eating the berries in a whirlwind in winter. Other birds that feed on the high-energy berries include the bobwhite, the Wild Turkey, warblers, vireos, kinglets, and the tiny Carolina wren.

Indigenous people used the leaves for seasoning, much as we would a bay leaf. The berries were used for seasoning as well, but sparingly as they are waxy; they can be ground and used like pepper. When boiled, the berries also yield a wax that is famous for its use in candles that keep away insects.

Also collectively known as the bayberry tree (as in bayberry candle), myrtles (genus *Myrica*) were also used extensively by Native Americans in a variety of medicinal applications, including as a painkiller, pick-me-up, diuretic, emetic, fever reducer, and tonsil gargle; for headaches and stomachaches; to kill worms; and to treat dysentery. Least you think your life has not been touched by the wax myrtle, its leaves are also used to improve the foaming of beer. Think of that the next time you enjoy a stein of suds. The root bark was also used in the last century to induce labor.

Although the berries are strong-tasting, they can be eaten fresh off the tree; they can also be preserved or even made into a wine. If you don't have a *M. cerifera* tree nearby, don't despair: There are other myrtles in North America. The fruit and leaves of *M. gale* (sweetgale), for example, have been used to flavor soups, stews, roasted meats, and seafood, as well as for tea. (When the plant is used as an additive to help beer foam, the brew is often called gale beer.) *M. californica*, *M. heterophylla*, *M. pensylvanica*, *M. pusilla*, and *M. rubra* have all been used similarly to *M. cerifera*.

Western Tansymustard

Descurainia pinnata

NOTABLE NUTRIENTS OR USES No nutritional information available

SAFETY NOTES Toxic to cattle in large amounts

NATIVE STATUS Introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Annual cool-season forb to 2.5 feet high, usually single-stemmed, leafy, covered with fine, gray hairs. Leaves alternate along wavy stems, each divided into small segments. Flowers range from yellow to whitish, in long clusters at stem ends, four oddly shaped petals. Very distinctive fruit, long, club-shaped, slender; seedpods two-celled capsules filled with many small, waxy seeds.

TIME OF YEAR Flowers January to July depending upon climate, seedpods follow quickly

RANGE All of the US, except Alabama, West Virginia, and New Hampshire; rare in Ohio and Vermont

ENVIRONMENT Plains, hills, disturbed areas; does very well in sandy soils and the desert. I look for it around high and dry paddocks and fence lines, and near dusty buildings.

METHOD OF PREPARATION Young leaves and seedpods as a trailside nibble or for seasoning or pickling; older leaves cooked. Seeds used in drinks, breads, and mush and as a thickener and flavoring.

Green Deane's Notes

I'm a bit reluctant to call this plant Western Tansymustard because it definitely grows in the eastern United States. (*Western* in this case means “west of Europe” and distinguishes it from a tansymustard in the Old World.)

Naming conventions aside, *Descurainia pinnata* shares several characteristics with a subset of members of the mustard family (Brassicaceae): small, edible leaves; spicy seeds in pods; rangy growth; the ability to survive in dry areas; and four-petaled yellow flowers resembling a cross. I find the raw or cooked leaves mildly mustardy—neither overly salty nor overly bitter—although the raw texture is a bit cottony. The seedpods can be eaten out of hand or pickled; the seeds are edible raw or cooked;

they can also be used to flavor soups, as a condiment ground into a powder, to make bread, or to thicken soups and stews. In Mexico the ground seeds are made into a drink with lime juice, claret, and sugar syrup.

We have some nutritional data obtained from animal studies. Per 100 grams, the plant—I presume this means the *entire* plant, not just the leaves—has about 85 calories, 2.72 grams of protein, 6.3 grams of carbohydrates, and 0.05 grams of fat. One hundred grams of seeds contain 24.4 grams of protein and 38.4 grams of fat.

Tansymustard was a major plant for various Indigenous communities, primarily in the western US. The Maricopa and Quechan, for example, baked the young greens in pits, alternating layers of greens with layers of hot rocks, then covering the top with earth. Of prime use, however, were the seeds: They were typically collected when ripe, then mixed with water and eaten like a mush; they were also ground and mixed with cold water and sugar to make a beverage.

Native Americans also used the seeds medicinally in the treatment of stomach complaints. A poultice of the entire plant was used to ease toothache pain, and an infusion of the leaves was used to treat sores. Another nonculinary use: The Hopi mixed the ground seeds with iron to make a pigment for pottery.

West Indian Chickweed

Drymaria cordata

NOTABLE NUTRIENTS OR USES Potassium, vitamin C, sodium, calcium

SAFETY NOTES Confirm your identification carefully, as there's a toxic look-alike.

NATIVE STATUS Native to Latin America and sub-Saharan Africa; introduced to tropical and subtropical areas around the world; invasive



Nutrition Notes	
Per 100 grams	
33 calories, 0.16 g fat, 44.44 g carbohydrates, 6.7 protein, 1.19 g fiber	
Vitamin C	39.51 mg
Calcium	5.52 mg
Copper	1.9 mg
Iron	10.8 mg
Magnesium	8.02 mg
Manganese	5.2 mg
Potassium	11784 mg
Selenium	1790 mcg

Sodium	59.45
Zinc	1.4 mg
Chromium	1.61 mg
Cobalt	0.71 mg
Nickel	0.43 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Annual herb with slender, smooth stems to about a foot long, frequently rooting at the nodes. Leaves roughly heart-shaped, opposite, with very short stems. Leaf veins palmate from the base (the veins go out like five fingers from the bottom end of the leaf, clearly seen on the underside). White flowers on long stalks; five sepals; five petals deeply two-lobed, shorter than the sepals; three stamens, style divided into three parts below the middle.

TIME OF YEAR During cool weather in warm climates, spring and summer in more-temperate climates

RANGE Primarily the Deep South, Texas, and Hawaii

ENVIRONMENT Likes sun and moist soils; a pesky weed in cultivated areas and lawns around the world

METHOD OF PREPARATION Leaves and shoots raw in salads or cooked. Has a mild flavor and tender texture.

Green Deane's Notes

Unlike its more well-known relative *Stellaria media*, known simply as chickweed (see [page 94](#)), West Indian Chickweed (*Drymaria cordata*) isn't completely edible—only the leaves and young shoots are typically eaten. Mild in flavor, the raw leaves can be added to salads or other dishes; you can also cook them. But as the ground leaves are also used medicinally and

can upset your stomach in large amounts, I suggest eating this plant in moderation.

Drymaria cordata is also known as Drymary, Heartleaf Drymary, White Snow, and Tropical Chickweed. In addition, it has a second scientific name, *D. diandra*, although some botanists consider that a subspecies or a variety.

D. gracilis is also edible, but *D. pachyphylla* (aka Thick Leaf Drymaria) is poisonous. Fortunately, it looks a lot different from other *Drymaria* species, usually growing in a small rosette just a few inches across. Its native range is Texas through the Southwest, and it often poisons livestock—so avoid it.

White Indigo Berry

Randia aculeata

NOTABLE NUTRIENTS OR USES No nutritional information available; vitamin C, beta-carotene

SAFETY NOTES No known safety issues

NATIVE STATUS Native to Florida, Bermuda, the Bahamas, the Caribbean, and from Mexico south through Central and South America to Colombia



Green Deane's Itemized Plant Profile

IDENTIFICATION Dense, stiff, semi-thorny, compact shrub to 10 feet tall and 5 feet wide, leaves opposite, clustered, spiny, leathery, simple, toothless, roundish, with stipules between the leaf bases; flowers small, white, fragrant; fruits round, white on the outside but almost black on the inside, many tiny seeds inside (average of 8 or about 18,000 to a pound)

TIME OF YEAR Flowers and fruits year-round

RANGE Southern Florida in the US

ENVIRONMENT Full sun, variable soils, some shade. Tolerant of coastal areas. Does not tolerate wet soils, so don't look for this in a swamp or on a wet lawn.

METHOD OF PREPARATION Marble-size fruit edible but not of great quality; used in herbal medicine to control dysentery. Bark also has medicinal uses. Leaves can be used in baths to treat infected sores. Stiff, large branches are good for making fishing poles.

Green Deane's Notes

The White Indigo Berry is in rare company: It is one of perhaps a half dozen or fewer white berries in the world that are edible (aside from cultivars, of course). A member of the coffee family, it has had at least four botanical names: *Randia mitis*, *Gardenia randia*, *R. latifolia*, and *R. aculeata* var. *mitis*, along with dozens of common ones including Box-Briar, inkberry, Prickle Bush, Fishing Rod, five fingers, and Goat Horn.

Some research exists regarding the plant's nutritional profile, though it's unclear in the case of one study (in Spanish) whether the plant in question is *R. aculeata* or a close relative called *R. monantha*. We do know that White Indigo Berry is high in vitamin C: 492 mg per 100 grams, or some eight times your daily need. Beta-carotene is also impressive: 224 mg per 100 grams. Fiber is 1.26%, which is only a little more than the protein and fat, both less than 1 gram. The fruit is reportedly a good source of minerals, but no specific examples have been reported. Finally, we know it contains the flavonoid rutin, which has antioxidant and anti-inflammatory activity.

Gardeners highly rate the shrub, which is related to wild coffee and firebush. The leaves and stiff, horizontal branching habit give the shrub a kind of geometric look. The small, white, tubular flowers are fragrant and occur all year. These in turn become white, edible fruit that is almost black inside; sometimes the fruit is ivory with a salmon tinge. Eaten out of hand,

the fruit will turn your tongue blue, but it doesn't have much flavor to speak of.

There are at least three other related species with edible fruit: *R. dumetorum* (ripe fruit cooked or roasted); *R. echinocarpa* (eaten raw); and *R. formosa* (yellow on the outside, black on the inside, tastes like molasses or blackberry jam).

Wild Apple (Crab Apple)

Malus spp.

NOTABLE NUTRIENTS OR USES Pectin, vitamin A, vitamin C, carbohydrates, fiber. Pectin is also a great source of fiber, lowers cholesterol, and protects against gamma radiation damage.

SAFETY NOTES Apple seeds (along with cherry and peach pits) contain amygdalin, a chemical that releases cyanide when ingested. You would have to eat upwards of 150–200 crushed seeds to get a fatal dose of cyanide, but they won't hurt you in small amounts (not to mention if you swallow them whole, you'll pass them largely undigested). That said, it's best to remove the seeds from any apple before giving it to children or pets.

NATIVE STATUS Four wild apple species are native to North America: *Malus coronaria* (Sweet Crab Apple), *M. fusca* (Pacific Crab Apple), *M. angustifolia* (southern crab apple), and *M. ioensis* (prairie crab apple).



Nutrition Notes

Per 100 grams (wild vs. cultivated)	
18 calories, fat NA, 21.89 g/16.8 g carbohydrates, 0.4 g/0.25 g protein, 1 g fiber	
Vitamin A	44 mg/59 mg
Vitamin C	9 mg/6.4 mg
Calcium	20 mg/8 mg
Magnesium	7 mg/5 mg
Phosphorus	17 mg/8 mg
Potassium	213 mg/127 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Tree seldom more than 20 feet high with a contorted and rigid crown, branches often short and spurlike, twigs thornlike, leaves alternating, sawtoothed, obvious network of veins on either side of the leaf. Quintet of fragrant, pinkish or white petals. If you cut the fruit through the middle, you should see a starshaped core where the seeds develop.

TIME OF YEAR Fall

RANGE *Malus coronaria*, Great Lakes region, particularly Ohio and Michigan; *M. fusca*, along the West Coast from northwestern California to Alaska; *M. angustifolia*, eastern/southeastern US, approximately from Florida to New Jersey and west to eastern Texas, Illinois, and Missouri; *M. ioensis*, Midwest and upper Mississippi River Valley

ENVIRONMENT Terrain that is not bone-dry or sopping wet; often found on the south side of hills

METHOD OF PREPARATION Use more or less like cultivated apples: eaten out of hand and in jellies, juice, applesauce/apple butter, desserts; often improved greatly by roasting near a fire or in an oven. Note that wild apples tend to be much less sweet than domestic ones.

Green Deane's Notes

Wild apples are among the most commonly overlooked foraging foods, owing primarily to their tartness. People often take just one bite, spit it out, and go on their way. What most people don't know, however, is that wild apples can be baked or roasted (as in near an open fire or in an oven) and made very tasty. Some are too bitter to eat even after cooking, but many can be transformed into very good eats.

Nutritional comparisons between wild and cultivated apples can vary because cultivated apples range from tart to sweet and wild apples tend to be smaller. Adjusting for size, and presuming the cultivated apple was not tart and the wild apple not sweet, the wild apple had more of everything except vitamin A (see box).

Often a wild apple's taste is moderated because of hybridizing with cultivated apples (*M. domestica*). There are no hard-and-fast rules for identifying which wild ones are edible raw—you just have to taste and experiment. Wild apples also usually have more pectin than cultivated ones; thus, they're frequently added to other fruits and domestic apples to help jellies set up. (Pectin is also a great source of fiber, lowers cholesterol, and is protective against gamma radiation.)

Wild Carrot

Daucus spp.

NOTABLE NUTRIENTS OR USES Vitamin C, calcium, copper, zinc, iron

SAFETY NOTES Confirm your identification carefully, as hemlock and wild parsnips are superficially similar.

NATIVE STATUS One species introduced; the other is native.



Nutrition Notes	
Root, per 100 grams	
35 calories, 0.9 g fat, 9.6 g carbohydrates, 0.9 g protein, 1.4 g fiber study done on <i>Daucus carota</i>	
Vitamin B1 (thiamine)	0.04 mg
Vitamin B2 (riboflavin)	0.04 mg
Vitamin B3 (niacin)	0.6 mg
Vitamin C	24 mg
Calcium	35 mg
Copper	0.1 mg
Iron	0.7 mg
Phosphorus	38 mg
Zinc	0.1 mg
Carotenoids	5.48 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Daucus carota* (Queen Anne's lace), erect biennial herb; leaves basal and alternate, pinnately divided with narrow segments; flowers small, white, in a terminal, umbrella-shaped cluster; 20 florets, often with red spot in middle; seed small, dry, ribbed, with bristly hairs. Roots smell of carrots. *D. pusillus* (American Wild Carrot), smaller, no red center, and fewer florets (generally 5–12).

TIME OF YEAR Roots in fall, blossoms in season

RANGE *D. carota*, primarily northeastern US; *D. pusillus*, southeastern US and along the West Coast from Baja California, Mexico, to British Columbia

ENVIRONMENT Full sun to partial shade, fields, pastures, meadows, rocky/clayey soils

METHOD OF PREPARATION Roots raw (if you have good teeth) or cooked; texture is stringy. Flower clusters can be batter-fried for a carrot-flavored gourmet treat. Aromatic seeds good for flavoring soups and stews. Dried roasted roots can be ground into a powder and used as a coffee substitute.

Green Deane's Notes

Wild carrots were a common pasture plant when I was a kid. On more than one occasion, I tried eating the root raw. The key is to find them at the end of their first year, before the roots grow woody. That woody part, however, can often be peeled off, thus making the root more edible.

There are actually two species of wild carrot in North America. The most common, *Daucus carota*, or Queen Anne's lace, is actually naturalized and native to Europe. That one often has four tiny red blossoms in the middle, surrounded by white blossoms. The native species, *D. pusillus*, is much

smaller and lacks the red center. Both have roots that are a hard chew—it helps to be hungry and have great teeth—but they do taste like carrots. Don't eat the leaves or seeds of wild carrots; they're more in the medicinal realm.

Unlike many native plants, there's not much evidence that Native Americans made much use of *D. pusillus*. Eastern tribes ignored it (or perhaps records of them using it are hard to come by). Only six western tribes seem to have used it: The Nez Perce and Navajo ate the roots, boiled or raw. They also used the plant to “clean the blood,” stop itching, and treat fevers and snakebites. The Clallam, Cowichan, Saanich, and Coast Salish ate the roots. Wild carrot seeds can also be ground and made into a tea to prevent (or terminate) pregnancy.

A majority of states (at least 35 of them) list *D. carota* as a pest or a noxious weed, as it germinates easily and mowing doesn't get rid of it. Some say the dried seed heads are a fire hazard and a threat to the honey industry. My advice: Eat the weeds!

Wild Cherry

Prunus spp.

NOTABLE NUTRIENTS OR USES Vitamin A, beta-carotene, lutein and zeaxanthin, potassium, antioxidants

SAFETY NOTES The foliage and seeds (stones) contain chemicals that convert to cyanide when ingested. Livestock and pets should be kept away from the trees. Discard the stones when eating or preparing the fruit.

NATIVE STATUS Native and introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION *Prunus serotina*, deciduous tree growing as tall as 80 feet. Leaves alternate, simple, 2–5 inches long, oblong to lance-shaped, finely serrated, very small glands on stem, dark green and lustrous above, paler below; usually small hairs along the leaf midrib. Flowers small, white, in hanging, narrow racemes 4–6 inches long. Fruit a round, dark-purple drupe, nearly black when ripe, 0.3 inch in diameter, bittersweet taste. Bark has short, narrow, horizontal lenticels when young, turns nearly black when older, breaking up into small, rough, irregular, upturned plates resembling potato chips or cornflakes.

TIME OF YEAR Fruit matures in June in warm climes, late summer to early fall farther north

RANGE Primarily the eastern half of the US, along with parts of Texas and the Southwest

ENVIRONMENT A pioneer species, it will move into old fields, abandoned railways, and the like. Prefers cool areas but absolutely will not grow in the shade—this is a tree you will find in full sun.

METHOD OF PREPARATION Free of stones, the fruit can be made into jellies, jams, pies, wine, and liquor. It is used for flavoring in soda and ice cream. The inner bark can be used to make cough syrup.

Nutrition Notes

Per 100 grams

50 calories, 0.9 g fat, 12 g carbohydrates, 7.1 g protein, 1.6 g fiber

Vitamin A	1283 IU (385 mcg RE)
Vitamin B1 (thiamine)	0.03 mg
Vitamin B2 (riboflavin)	0.04 mg
Vitamin B3 (niacin)	0.4 mg
Vitamin B5 (pantothenic acid)	0.14 mg
Vitamin B6 (pyridoxine)	0.44 mg

Vitamin C	10 mg
Vitamin K	2.1 mcg
Calcium	16 mg
Copper	0.1 mg
Iron	0.32 mg
Magnesium	9 mg
Manganese	0.9 mg
Phosphorus	15 mg
Potassium	173 mg
Sodium	3 mg
Zinc	0.1 mg
Beta-carotene	770 mcg
Choline	6.1 mg
Lutein and zeaxanthin	85 mcg

Green Deane's Notes

There are more than 1,000 different wild species of cherries, perhaps 1,200. Their flavor ranges from bitter and sour to just sweet enough to be eaten by some creature to move the seeds around. I grew up with chokecherries (*Prunus virginiana*), whose name is well deserved as they're difficult to eat raw; indeed, I wondered how anyone could ever eat them.

In addition to the nutrients in the box, black cherry (*Prunus serotina*) contains some 17 antioxidants, including anthocyanins, quercetin, and isoquercitrin, and is a rich source of melatonin, the sleep hormone.

While the fruit of the black cherry tree is edible, the leaves, twigs, bark, and seeds are poisonous to cattle, horses, and humans. They contain cyanogenic glycosides, or chemicals that are converted to cyanide during digestion. Most livestock poisonings caused by black cherry come from eating wilted leaves, which are more toxic than fresh ones. It is estimated that more livestock are killed due to eating black cherry leaves than from any other plant. (Oddly, deer don't have a problem with black cherry leaves, twigs, or shoots.)

There is some debate regarding whether cherry stones can be made safe to eat. In some Indigenous cultures, *Prunus* seed kernels were ground and the mash made into cakes and allowed to dry for a couple of days before cooking. With some species, this gets rid of the toxic glycosides and makes the seeds edible. If you decide to experiment, though, you're absolutely on your own. I recommend that you *not* try to prepare the seeds—or sue me if you do—but if you decide to do it anyway, be alert to a pronounced almond aroma: That's a sign of cyanide.

In the spring of 2001, hundreds of foals in Kentucky's horse country were mysteriously miscarried or stillborn. The problem was traced to eastern tent caterpillars that had fed on the leaves of black cherry trees growing on thoroughbred farms. The caterpillars concentrated the toxic cyanide compounds in their feces, which then contaminated the bluegrass eaten by pregnant mares.

Another heads-up: If you encounter a tree whose leaves have only a few soft spines around the edges and whose bark is smooth, it's the highly toxic cherry laurel (*Prunus caroliniana*, recently renamed *Prunus laurocerasus*), which has hard, blue-black fruit and two glands on the underside of each leaf near the base of the stem. The crushed leaves have an intense almond aroma—again, a telltale (and deadly) sign of cyanide.

Wild Fennel

Foeniculum vulgare

NOTABLE NUTRIENTS OR USES Potassium, calcium, magnesium, phosphorus, sodium

SAFETY NOTES No known safety issues

NATIVE STATUS Native to the Mediterranean basin; naturalized over much of the temperate world, including North America



Nutrition Notes	
Seeds, per 100 grams	
345 calories, 14.9 g fat, 52.4 g carbohydrates, 15.8 g protein, 39.8 g fiber	
Vitamin A	135 IU (40.5 mcg RE)
Vitamin B1 (thiamine)	0.4 mg
Vitamin B2 (riboflavin)	0.35 mg
Vitamin B3 (niacin)	6 mg
Vitamin B6 (pyridoxine)	0.47 mg
Vitamin C	21 mg
Calcium	1196 mg
Copper	1.06 mg

Iron	18.54 mg
Magnesium	385 mg
Manganese	6.5 mg
Phosphorus	487 mg
Potassium	1694 mg
Sodium	88 mg
Zinc	3.7 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Erect perennial herb 4–10 feet tall. Fronds thin, feathery, bright green, leaves yellowish green (occasionally bluish purple), finely dissected, with a strong anise scent. Flowers yellow, small (0.25 inch across), petals narrow at tips, in large, rounded, umbrella-like clusters (compound umbels) roughly 4 inches across.

TIME OF YEAR Fronds in spring, seeds midsummer to fall, flowers April through July

RANGE Most of the US except for Alabama, Arkansas, Indiana, Oklahoma, the Upper Midwest and Mountain States, New Hampshire, and Vermont. Particularly common in California, where it has been established for well over 120 years.

ENVIRONMENT Mesic locations with a Mediterranean climate, from sea level to 2,000 feet. Grows in disturbed areas, locations adjacent to fresh or brackish water, pastures, abandoned lots, and roadsides. Common in grasslands; coastal scrub; savannas; and the banks of creeks, estuaries, and bays. Prefers sandy, acidic soils; can tolerate clay.

METHOD OF PREPARATION Young fronds as greens and or flavoring, older greens and seeds for flavor. Wild Fennel pollen is also a spice—to collect it, cut off flowering heads, place in a paper bag, and store in a dry place, or shake the flowerhead inside a paper bag.

Green Deane's Notes

One of the outstanding sensory experiences of hiking in Greece is smelling in the wild the herbs one usually buys in little plastic containers at the store. I was hiking Samaria Gorge on the island of Crete when I first encountered Wild Fennel in its native habitat. Years later, I saw it again while hiking in Southern California.

Note: Wild Fennel is not the fennel you buy seasonally at the grocery store. Cultivated fennel has a large, edible bulb and nearly flavorless greens; Wild Fennel does not produce a bulb but has flavorful greens and seeds. If you like the flavor of sweet licorice, you'll like fennel.

There are several ways to approach the plant nutritionally. When it comes to the seeds (see box), it's doubtful that you'd ever eat 100 grams' worth, though if you divide by 10, you might have a tablespoon's worth. Most of us have tasted fennel seeds in Italian sausage, but they can also be used in seafood, chicken, beef, and pork dishes.

Fennel shoots have, per 100 grams, 0.5 gram of fat; 1.5 grams of protein; 22 grams of carbohydrates; and 6.57 grams of sugar, most of it glucose. The leaves, per 100 grams, contain 0.5 gram of fat, just over 1 gram of protein, 18.44 grams of carbs, and 1.29 grams of sugar. Stems, again per 100 grams, have 0.5 gram of fat, 1 gram of protein, 20 grams of carbs, and 4.92 grams of sugar. Finally, 100 grams of blossoms have 1.28 grams of fat, 1.37 grams of protein, 22.82 grams of carbs, and 4.07 grams of sugar. The main type of fat in the greens and blossoms is polyunsaturated (linoleic and linolenic acid), followed by saturated (palmitic acid) and monounsaturated (oleic acid). The most abundant minerals are potassium, calcium, magnesium, phosphorus, and sodium.

To cook the young fronds, bring a large pot of water to a rolling boil, cook for 10 minutes or so, and drain. You can also save the cooking liquid for flavoring. Some folks prefer the fronds mixed in with other greens, as they

can be a bit overwhelming on their own. You can also use them to flavor pastas and soups for flavor.

Medicinally, Wild Fennel has been used to treat stomach complaints; it also increases milk production in nursing mothers.

Wild Fig

Ficus spp.

NOTABLE NUTRIENTS OR USES Vitamin E, vitamin C, calcium, sodium, phosphorus

SAFETY NOTES No known safety issues

NATIVE STATUS Some species are native to Asia, the Indian subcontinent, or the Mediterranean basin; others are native to the US.

Green Deane's Itemized Plant Profile

IDENTIFICATION *Ficus aurea* (Florida Strangler Fig), tree to 65 feet, milky sap, orange twigs, smooth gray or light-brown bark, many aerial roots. Leaves alternate, stalked, oblong, oval or elliptical, pointed or wedge-shaped, 2–5 inches long, leathery, dark glossy above, paler below. Fruit stalkless, yellow when ripe, about 0.5 inch wide. *F. benghalensis* (Banyan Fig) can grow to 100 feet tall; fruit bright red when ripe. *Ficus benjamin* fruit start out white and turn deep purple and are edible.

TIME OF YEAR Year-round

RANGE Warmer regions of the US, including Florida, Texas, Arizona, and Southern California

ENVIRONMENT Hummocks, pinelands, old residential areas

METHOD OF PREPARATION Raw fruit out of hand, latex as chewing gum. Banyan Fig leaves can be used as plates and to wrap food.



Nutrition Notes: *F. benghalensis*

Seeds, per 100 grams

135 calories, 2.56% fat, 12.95% carbohydrates, 15% protein, 19.45% fiber

Vitamin C	203 mg
Vitamin E	517 mg
Calcium	731 mg

Copper	12.19 mg
Iron	33.46 mg
Magnesium	220.7 mg
Manganese	21.55 mg
Phosphorus	250.9 mg
Potassium	192.3 mg
Sodium	399.4 mg
Zinc	11.24 mg
Chromium	17.11 mg

Green Deane's Notes

The figs you buy commercially are *Ficus carica*, but there are more than 750 species in the *Ficus* genus—and two in particular have a creepy side. The Florida Strangler Fig (*F. aurea*), for example, often starts as a seed “deposited” by a bird in the top of a tree, where it begins to grow as an epiphyte. The plant then sends a root down to find earth; once it does, it slowly takes over the host tree, enveloping it and sending down more and more roots. In time it becomes a huge tree, with the original host simply dying and disappearing. The Banyan Fig (*F. benghalensis*), native to India but naturalized in Florida and other warm parts of the US, has horizontal branches that send down vertical “prop” roots that grow into trunks. The tree simply keeps growing out and down, covering acres. Nearly everything in its shade (except grass) dies. Like all figs, both species are pollinated by wasps that die inside of the fruit.

Whereas the fruit of the Florida Strangler Fig is oval and has a small yellow fruit, the reddish fruit of the Banyan Fig tree ranges from soft and slightly sweet to a tasteless dry sponge. While its leaves are said to be edible, they are more often used as plates and for wrapping food. Fig leaves are also used to impart flavor to fire-cooked foods.

A third fig found in my adopted home state of Florida is the Shortleaf Fig, or *F. citrifolia*. As its scientific name implies, its leaves are similar to those

of citrus trees. The 1-inch fruit, which goes from yellow to dark red when ripe, is technically edible but tasteless and is not improved by cooking.

Native to South and Southeast Asia but also found in Florida, *F. elastica* is also known as the rubber plant and is popular as an ornamental in homes and offices. The pink, unopened developing leaves at the end of branches can be boiled and eaten. The fruit is edible as well, but just barely.

A hundred grams of Banyan Figs have 72 calories, 2 grams each of protein and fat, 8 grams of fiber, 12 grams of carbohydrates, 364 mg of calcium, and 43 mg of phosphorus. The edible seeds are quite nutritious as well (see box). In general, wild figs have about one-third the calories of cultivated figs.

Additional edible fig species include *F. auriculata*, *F. benjamina*, *F. capensis*, *F. glomerata*, *F. hirta*, *F. insipida*, *F. lacor*, *F. laevigata*, *F. palmata*, *F. pseudopalma*, *F. pumila*, *F. racemosa*, and *F. sycomorus*.

Wild Garlic, Wild Onion, and Ramps (Wild Alliums)

Allium spp.

NOTABLE NUTRIENTS OR USES See note about nutritional data below; potassium, iron, calcium, phosphorus.

SAFETY NOTES All plants in the *Allium* genus, wild or not, are toxic to cats, dogs, horses, and cattle. In general, any plant that *looks* like an allium but doesn't also *smell* like garlic or onions isn't safe to eat. For example, lily-of-the-valley (*Convallaria majalis*) and false hellebores (*Veratrum* spp.) look very similar to ramps but are highly toxic.

NATIVE STATUS Native and/or introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION *Allium canadense* (Canada Garlic, wild garlic, or wild onion), leaves basal, grasslike, flowers small, six-petaled, garlic-like/onion-like odor, stems round, older stems hollow. *Allium tricoccum* (ramp,

ramson, wild leek, or wild garlic) has two or three broad, smooth, light-green, onion-scented leaves. Both plants have underground bulbs resembling small white onions.

TIME OF YEAR Ramps in spring, wild garlic/wild onions through the summer, bulbs in fall

RANGE Eastern half of the US and Canada; ramps especially prevalent in Appalachia

ENVIRONMENT Wild onion/wild garlic likes rich soil and sun but can grow in poor soil with adequate water. Ramps like woodlands and dappled shade. Locally, I've seen wild onions growing in damp places or areas where runoff gathers before seeping in.

METHOD OF PREPARATION Both plants are edible in their entirety, raw or cooked: in salads or as a seasoning, potherb, or soup base. They're also good pickled with red bay leaves, peppergrass seeds, and vinegar.

Green Deane's Notes

One could simply say that wild garlic and wild onions—collectively known as wild alliums—are quite healthy to eat and just leave it at that. But, of course, there's much more to these, um, *fragrant* plants.

First of all, *wild garlic* and *wild onion* aren't exact botanical terms, so what your taste buds tell you is one plant might be called something else. Ramps, for instance, taste like garlic but are also called wild garlic, wild onions, and wild leeks. Then there are species like *Allium canadense*, which tastes different depending on the part of the plant: It has garlicky cloves on the top, oniony bulbs on the bottom, and green stems in between that can pass for chives or leeks.

The *Allium* genus comprises several hundred plants, from 600 or 700 to as many as 900. *Cornucopia II*, a source book of edible plants, lists about five

dozen species and varieties. While there is abundant research on the various species, it's difficult to get a simple nutritional profile of one species in particular. You have to borrow from a lot of sources, and there are often errors or at least exaggerations.

For instance, many websites will tell you that garlic is rich in vitamin C, but what they don't tell you is that you'd have to eat 65–90 cloves of garlic to get your recommended daily dose. (*Phew!*) According to *Bowes & Church's Food Values of Portions Commonly Used*—a respected reference guide that also contains nutritional information on some wild plants—the nutrient that garlic is richest in is potassium: 12 mg per clove. It also has about 5 mg of iron and calcium, 4 mg of phosphorus, less than 1 mg each of sodium and zinc, and just traces of B vitamins. Alliums also contain sulfur compounds, which not only are responsible for their pungent flavor but also show promise in the treatment of heart disease, cancer, obesity, diabetes, GI disorders, high cholesterol, and inflammatory diseases.

Wild Grape

Vitis spp.

NOTABLE NUTRIENTS OR USES Vitamin A, beta-carotene, calcium, potassium, vitamin K (leaves)

SAFETY NOTES If you see fruit that looks like grapes growing on vines without tendrils, it's not grapes—and chances are it's unsafe to eat. Porcelain Berry (*Ampelopsis brevipedunculata*), aka peppervine, has berries that start out white, then turn green or pink and then dark purple. Although it's not dangerous, it definitely isn't edible, and the berries will burn your mouth. In addition to having no tendrils, moonseed (*Menispermum canadense*) has seeds that are shaped like a crescent moon (grape seeds are teardrop-shaped). If eaten, the purplish-black berries can cause irregular heartbeat, seizures, and death. Virginia creeper (*Parthenocissus quinquefolia*) has dark-blue fruit, red stems, and five leaflets; it contains oxalic acid crystals, which can not only burn your mouth but also damage your kidneys. It *does* have tendrils, but they end in disk-shaped suckers that help them attach to the outside of buildings and the like. Where I grew up wild (self-liberated) Concord grapes (*Vitis lambrusca*) were common. They were developed in 1849 to challenge then French control of the wine industry. Grapes are extremely susceptible to absorbing pollution from wildfire smoke.

NATIVE STATUS An estimated 60 species of wild grapes are native to North America. (*Vitis vinifera*—the commercially cultivated species—is native to the Mediterranean, central Europe, and southwest Asia.)



Nutrition Notes

Leaves, per 100 grams

93 calories, 2.12 g fat, 2.4 g carbohydrates, 5.6 g protein, 11 g fiber

Vitamin A	27521 IU (8256 mcg RE)
Vitamin B1 (thiamine)	0.04 mg
Vitamin B2 (riboflavin)	0.35 mg
Vitamin B3 (niacin)	2.36 mg
Vitamin B5 (pantothenic acid)	0.23 mg
Vitamin B6 (pyridoxine)	0.4 mg
Vitamin C (as ascorbic acid)	11.1 mg
Vitamin E	2 mg
Vitamin K	108.6 mcg
Calcium	363 mg
Copper	0.4 mg
Magnesium	95 mg
Manganese	2.85 mg
Phosphorus	91 mg
Potassium	272 mg
Selenium	0.9 mcg
Zinc	0.67 mg
Beta-carotene	16194 mcg
Choline	12.8 mg
Lutein and zeaxanthin	1747 mcg

Green Deane's Itemized Plant Profile

IDENTIFICATION Grapes grow on woody vines with tendrils—if there are no tendrils, it's not a grape plant (also see Safety Notes). Leaves vary greatly in shape from serrated and round to heart-shaped and smooth to lobed and hairy. Tendrils—how the grape climbs—can be single or forked. Fruit is usually dark blue to black; hybrids of wild and cultivated grapes can be green, red, blue, or black and are often very large. Seeds are always teardrop-shaped.

TIME OF YEAR Midsummer to late fall, more toward fall farther north

RANGE All over the US

ENVIRONMENT Grapes are very adaptable. They like full sun, good drainage, and a healthy amount of water but will survive in dry areas. They can even be found growing in swamps.

METHOD OF PREPARATION Out of hand or made into jelly, jam, wine, raisins, fruit leather; the seeds can be pressed for oil and the young leaves boiled and eaten or consumed raw. Grape seeds (along with stems, skins, and pulp left over from winemaking or juicing) are also used to make an Italian spirit called grappa.

Green Deane's Notes

Grapes are pretty easy to identify, but figuring out what kind of grape you have can be maddening. There are 60 or so native grapes in North America, plus escaped grapes and a lot of crossbreeds of wild and cultivated species. We're strictly interested in wild grapes, which are also called scuppernongs, fox grapes, summer grapes, river grapes, Rock Grapes, possum grapes, winter grapes, muscadines, and the like.

Interestingly the leaves of wild grapes (see nutrition box) have significantly more nutrients than the grapes themselves, which contain mostly sugar. Per

100 grams, wild grapes have 57 calories, 3.9 grams of fiber, and less than a gram each of protein and fat. Micronutrients per 100 grams are potassium, 203 mg; phosphorus, 24 mg; calcium, 37 mg; magnesium, 14 mg; manganese, 1.93 mg; sodium, 1 mg, copper, 0.12 mg; and zinc, 0.11 mg. Grapes are poor in B vitamins, with just 1.5 mg of B2 (riboflavin) and 2 mcg of B9 (folate). They also contain just 39 mcg of beta-carotene, or 67 IU of vitamin A; 64 mcg of lutein and zeaxanthin; and 6.5 mg of vitamin C.

What wild species you have tends to be related to where you are. *Vitis lambrusca*, *V. aestivalis*, *V. riparia*, *V. vulpina*, *V. californica*, and *V. rotundifolia*, for example, cover a lot of territory. In Florida, where I live, *V. rotundifolia*, *V. aestivalis*, and *V. shuttleworthii* are common. When I was growing up in Maine, the common wild grape was an escaped Concord, which is a strain of *V. lambrusca*. Other varieties of *V. lambrusca* are Catawba, Cayuga, Isabella, Niagara, and Antoinette. Most Concord grapes are used for juice and jelly instead of wine because of the strong grape flavor. Catawbas are often used for making sparkling wines and Niagaras for semisweet to sweet wines.

Strains from *V. rotundifolia* (commonly called muscadine, include Calos, Noble, and scuppernong) are used to make sweet wines. Two winemaking strains of *V. aestivalis* (aka summer grape) are Norton and Cynthiana; they are used to make high-quality dry reds. Strains of *V. riparia* (riverbank grape or frost grape), which grows in the Midwest, include Bacchus, Baco Noir, Elvira, Frontenac, Marechal Foch, and Triomphe d'Alsace. Chancellor, DeChaunac, Aurore, Vidal Blanc, and Vignoles are strains of *V. rupestris* (mountain grape or Rock Grape), which is native to the Ozarks of Arkansas and Missouri. The mustang grape (*V. mustangensis*) grows from Texas to Alabama; mustang wine was immortalized in a song by Steve Earle. Sour *V. californica* is a West Coast grape used for jelly and jam.

Wild Lettuce

Lactuca spp.

NOTABLE NUTRIENTS OR USES No nutritional data available; lettuces are among the least nutritious vegetables, with low-to-negligible amounts of vitamins and minerals.

SAFETY NOTES See identification tips below.

NATIVE STATUS Three of the four species described below are native to the US; *Lactuca serriola* is native to Europe, Asia, and North Africa but naturalized elsewhere.

Green Deane's Itemized Plant Profile

IDENTIFICATION *L. floridana* (Woodland Lettuce), triangular (V-shaped) leaf stem, pure white sap, usually a line of hair on the bottom of the midrib of older (lower) leaves. Leaves alternate, petiole long, not clasping the stem. Basal leaves toothed, pinnately lobed, to 6 inches long and 3.5 wide, lateral lobes round to lance-shaped, terminal lobe arrow-shaped. Blossoms vase-shaped, 11–17 petals, no central disk, overlapping vertical bracts with purple tips



L. canadensis (Canadian Lettuce), triangular (V-shaped) leaf stem, milky sap that quickly turns tan. Line of hair along bottom of leaf midrib. Leaves lobed, often sharply so, ending in a lance-shaped point. Younger leaves pointed, fewer lobes than older, often wavy. Some variations have small, sparse hairs on and along the underside of the entire main leaf. Blossoms yellow, sometimes with pinkish tips

L. serriola (prickly lettuce, compass plant), leaves alternate, grasping the stem, lobed or not, 6 inches long, 3 inches wide, distinct white midrib, hairless, whitish, edges spiny, bottom of midrib has numerous spines. Leaves have terminal lobes larger than lateral lobes, entire leaves usually oblong, often have red around the edges. Ray flowers yellow, no disk. Sap is pure white and can be irritating. Turns its leaves toward the sun, often such that they point north and south

L. graminifolia (Grassleaf Lettuce), grows to 3 feet tall, leaves skinny, grasslike, some teeth/lobes on basal leaves. Bluish or white ray flowers, no disks. Milky sap

TIME OF YEAR Spring or early summer in cool climes, winter and early spring in warm areas

RANGE *L. canadensis*, all of North America except Nevada, Arizona, and Saskatchewan; *L. floridana*, eastern half of North America, excluding New England and the Maritime Provinces in Canada; *L. graminifolia*, North Carolina south and west to Arizona; *L. serriola*, throughout the US

ENVIRONMENT Dry fields to pastures to damp woodlands

METHOD OF PREPARATION Most wild lettuces can be eaten raw but are milder if cooked.

Green Deane's Notes

There are many species in the genus *Lactuca*. Most have a V-shaped stem, white or beige sap, and a line of hair along the bottom of the leaf midrib. (None, however, can get you high, so ignore the internet nonsense about *L. virosa*.)

Once you've determined that the leaf stem is V-shaped, break a leaf and check the sap, which can be white or beige or turns from white to beige in a minute or two. The color of the sap helps you sort out the species, as does the shape and length of the leaf. The hairs on the back of the leaf stem can be few and fragile or many and stiff. If the plant is old (usually yellow or blue), the color of the blossom can also be a clue to the species.

Wild lettuce species in addition to the ones described include the following: *L. biennis*, northern half of the US and Canada; *L. hirsute*, eastern half of the US and Canada; *L. ludoviciana*, west of the Mississippi; *L. × morssii* (*L. biennis* × *L. canadensis*), Illinois, Maine, Massachusetts, Michigan, New York, Ohio, and Virginia; *L. saligna* (nonnative), most of North America except the High Plains states, western Canada, Florida, and New England; *L. sativa*, scattered in some 16 states, mostly New York to Missouri and along the West Coast; and *L. tatarica*, most of North America except the Deep South (excluding Alabama).

Wild Mint

Mentha arvensis, *Clinopodium brownei*

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, potassium, calcium, phosphorus

SAFETY NOTES See safety notes below about yerba buena below.

NATIVE STATUS Native and introduced



Nutrition Notes	
Per 100 grams	
39 calories, 1 g fat, 7.7 g carbohydrates, 2.9 g protein, 1.1 g fiber	
Vitamin A	4447 IU (1334 mcg RE)
Vitamin B1 (thiamine)	0.13 mg
Vitamin B2 (riboflavin)	0.25 mg
Vitamin B3 (niacin)	0.8 mg
Vitamin C (as ascorbic acid)	64 mg
Calcium	166 mg
Iron	5.3 mg
Phosphorus	45 mg
Potassium	179 mg

Sodium

2 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Mentha arvensis* syn. *M. canadensis* (Canadian Mint, American Wild Mint), dense whorls of small blossoms that can be white, lavender, or pale pink. Leaves opposite, bell-shaped, axils hairy, stems square, minty aroma. *Clinopodium brownei* (Browne's Savory, St. Johns Mint), sprawling, creeping, erect perennial with square stems and opposite leaves. Stems nearly hairless, flowers have purple splotches on petals and in throat. Entire plant aromatic (minty).

TIME OF YEAR *M. arvensis*, spring to fall; *C. brownei*, year-round

RANGE *M. arvensis*, Canada and most of the US; *C. brownei*, southeastern US from South Carolina west to Texas

ENVIRONMENT All kinds of soil as long as it's damp, full sun to partial shade

METHOD OF PREPARATION Use fresh or dried as a tea or flavoring; can also be used to make wine

Green Deane's Notes

Nearly everyone has wild mint growing near them. *Mentha arvensis* (aka *M. canadensis*) is perhaps the most common globally. Also known as Canadian Mint and American Wild Mint, it's found in all of Canada, all but six US states, and even down into central Mexico. It's also found in China, Japan, Korea, Russia, Siberia, India, Nepal, Sri Lanka, Cambodia, Vietnam, Laos, Malaysia, Indonesia, and the Philippines. The mint has as many names as the countries it grows in and is cultivated in Africa, Asia, and the Americas.

Perhaps because of the heat and lack of elevation, *M. arvensis* doesn't like the Deep South very much. More common where I live (Florida) is *Clinopodium brownei*. Like all mints, it can be used as food and flavoring.

Mint wine is particularly popular in Britain, so I started some for my foraging classes to taste.

Like *M. arvensis*, *C. brownei* likes damp spots. A minuscule mint, it grows in swales and other moist places and blooms all year. It, too, has many common names, among them Browne's Savory, creeping Charlie, and St. Johns Mint (an allusion to the St. Johns River, the longest river in Florida). Research suggests it might facilitate brain function and improve memory.

If you live on the West Coast, you'll find *C. douglasii*, aka yerba buena, in addition to *M. arvensis*. It is slightly more tolerant of dry conditions and can be found as far east as western Montana. Making tea with it is a matter of taste when it comes to amounts, although herbalists say it should be avoided by pregnant women.

Wild Mustard

Brassica spp.

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, potassium, phosphorus, calcium

SAFETY NOTES Some people are allergic to mustards, so if you’ve never eaten them before, try a small amount before eating more. Also, mustards can cause gastrointestinal problems in dogs and cats. Avoid collecting from contaminated areas, as this plant bioaccumulates toxins.

NATIVE STATUS Native to Eurasia; brought to North America in the 1700s



Nutrition Notes	
Leaves, per 100 grams (wild vs. cultivated)	
23 calories/27 calories, 0.4g/0.42 g fat, 5.6 g carbohydrates, 2.2 g/2.8 g protein, 3.2 g fiber (cultivated)	
Vitamin A	1900 IU (570 mcg RE)
151 IU (45.3 mcg RE)	0.25 mg
Vitamin B1 (thiamine)	0.8 mg (wild and cultivated)

Vitamin B2 (riboflavin)	0.11 mg (wild and cultivated)
Vitamin B3 (niacin)	0.6 mg/0.8 mg
Vitamin B9 (folic acid)	12 mcg (cultivated)
Vitamin C	48 mg/70 mg
Vitamin E	2 mg (cultivated)
Vitamin K	257.5 mcg (cultivated)
Calcium	115 mg (cultivated)
Iron	1.8 mg/1.64 mg
Phosphorus	58 mg (cultivated)
Potassium	220 mg/384 mg
Sodium	18 mg/20 mg
Lutein and zeaxanthin	3730 mcg (cultivated)

Green Deane's Itemized Plant Profile

IDENTIFICATION Annual plant to 6 feet tall, flowers yellow, four-petaled, not veined, in clusters, leaves toothed, somewhat lobed. Seeds in pods (siliques) that open straight down the middle to expose the seeds on both sides

TIME OF YEAR Spring or summer in northern climates, winter in warmer ones

RANGE All over North America

ENVIRONMENT Well-drained, sandy to rich soils, old pastures, gardens, lawns, roadsides

METHOD OF PREPARATION Leaves as potherb, seeds for spice or flavoring, can use flowers to flavor vinegar. Some young leaves can be used raw in salads.

Green Deane's Notes

If you can't find wild mustard growing near you, you must be living in the middle of a desert because it even grows in the Arctic Circle. In fact, it's among the few plants found in Greenland and is even found near the magnetic North Pole.

Mustards are in the same large family (Brassicaceae) with cabbage, cauliflower, broccoli, turnips, kale, kohlrabi, wasabi, and other vegetables. In addition to the seeds, which are used to make the familiar condiment, mustard leaves, flowers, seedpods, and roots are also edible.

There are so many wild mustards, it can be hard to tell which one you might have. They're all edible, but some are a little more edible than others. For example, the mustard greens I used to pick in Maine were fairly tender and not overly strong when cooked, but the greens I pick here in Florida are much tougher and spicier. They have to be chopped up more and cooked longer, but they're still delicious, if a bit toothy. The point is, you have to experiment a bit to find a mustard that you like. There are no toxic mustards (if you're human). If you can identify the blossom—which is shaped like a Maltese cross—you're good to go.

Young leaves can be used raw in salads or cooked as a potherb. As the plant ages it becomes stronger, and sometimes the leaves are too bitter to eat. Tender young seedpods can be added to salads for a pepper bite. You can also make your own mustard from the seeds—just grind them up and mix them with vinegar (salt optional). Each plant can produce 2,000–3,500 seeds a season, and the seeds can remain dormant underground for years.

Flower buds are also tasty when boiled. Or add raw mustard flowers to your favorite vinegar; the ratio is about half a cup of blossoms per pint of vinegar.

Wild Plum (Chickasaw Plum)

Prunus angustifolia

NOTABLE NUTRIENTS OR USES Lutein and zeaxanthin, beta-carotene, fiber, potassium, calcium

SAFETY NOTES Like cherry pits, plum pits contain amygdalin, a chemical that gets converted to cyanide in the body. A few pits aren't enough to do adults any harm; still, it's best not to swallow them or chew them, and you should keep them away from kids and pets.

NATIVE STATUS Native to Texas and Oklahoma but naturalized throughout much of the US



Nutrition Notes	
Per 100 grams	
91 calories, 0.4 g fat, 21.95 g carbohydrates, 0.5 g protein, 6 g fiber	
Vitamin A (as beta-carotene)	1930 mcg
Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.04 mg

Vitamin B3 (niacin)	0.37 mg
Vitamin B5 (pantothenic acid)	0.3 mg
Vitamin B6 (pyridoxine)	0.09 mg
Vitamin C	10.3 mg
Vitamin E	0.53 mg
Copper	0.04 mg
Magnesium	8 mg
Manganese	0.8 mg
Phosphorus	30 mg
Potassium	364 mg
Choline	5.2 mg
Lutein and zeaxanthin	920 mcg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Prunus angustifolia* (Chickasaw plum), small, thorny tree to 25 feet tall, usually much smaller, flowers small (up to 0.4 inch wide and 1 inch long), five white petals, fragrant, reddish-orange anthers, appear in clumps in early spring before the leaves. Fruit small, bright yellow to red, round to oval, 0.3–0.5 inch in diameter, flesh juicy; sometimes stays green yet ripens to sweet. Bark at first smooth and reddish, then develops numerous elongated, light-colored, horizontal hash marks. Leaves toothed, form a trough in the center; teeth have yellow or red glands on the tips.

TIME OF YEAR Late spring to late summer, depending on where you live

RANGE *P. angustifolia*, from Pennsylvania west to the Rockies and south to Central Florida; also California

ENVIRONMENT Any open space in scrub forest, roadsides, fences, prairies. Prefers sandy soils. Easily transplanted or grown from seed. The Chickasaw plum and the American plum (*P. americana*) are closely related and hybridize easily.

METHOD OF PREPARATION Out of hand or for jelly, pies, preserves, and wine

Green Deane's Notes

One wild plum I have foraged and raised is Chickasaw plum (*Prunus angustifolia*). Every spring it puts on a show bursting with white blossoms. Native Americans and settlers regularly ate Chickasaw plums, which are sweet with a tang. Indigenous foragers also dried the plums for winter use; some groups used the seed kernels, while others didn't.

Most commercial plums come from two species, *P. americana* and *P. domestica*. Wild plums have half the sugar of cultivated versions, twice the vitamin E, 3 times the fiber, 10 times the beta-carotene, and 13 times the lutein and zeaxanthin. (See box for more information.)

Liberated from their shells, plum seed kernels create cyanide in your gut when eaten raw. Very small amounts won't hurt you, but it's still a good idea not to eat them. Some Indigenous people would make cakes out of the mashed kernels. Letting the cakes rest for a day or so allowed enzymes to break down the toxic chemicals, as did subsequent cooking. That said, this isn't something I recommend trying on your own.

Wild Pumpkin (Seminole Pumpkin)

Cucurbita moschata Duchesne ex Poiret

NOTABLE NUTRIENTS OR USES Vitamin A

SAFETY NOTES No known safety issues

NATIVE STATUS Native to Central and South America; naturalized in the US



Green Deane's Itemized Plant Profile

IDENTIFICATION Vine soft, hairy, creeping, leaves ovate or nearly round or sometimes triangularly lobed, toothed, 6–12 inches long, soft, limp. Flowers funnel-shaped, crinkly, yellow, five-lobed, 3–4 inches wide. Fruit ribbed, round, oblate, pear-shaped, or short-necked, orange when ripe with orange-yellow flesh, central cavity more or less filled with soft, fibrous pulp and flat, elliptical, white seeds to 0.25 inch long

TIME OF YEAR Fall and winter

RANGE Northeastern to central US (New Jersey, Pennsylvania, Ohio, Illinois); southeastern US (Florida, Georgia, Mississippi, Louisiana, Texas); also Arizona

ENVIRONMENT Hummocks, everglades, abandoned camps

METHOD OF PREPARATION Boiled or baked, dried and ground into a flour for bread, young shoots and leaves cooked as greens, flowers (with pistils removed) cooked and eaten; can also be stuffed. Seeds can be roasted or hulled and ground into a porridge.

Nutrition Notes

Flowers, per 100 grams

15 calories, 0.07 g fat, 3.28 g carbohydrates, 1 g protein, fiber NA

Vitamin A	1947 IU (584 mcg RE)
Vitamin B1 (thiamine)	0.04 mg
Vitamin B2 (riboflavin)	0.08 mg
Vitamin B3 (niacin)	0.69 mg
Vitamin B9 (folic acid)	59 mcg
Vitamin C	28 mg
Calcium	39 mg
Iron	0.7 mg
Magnesium	24 mg
Phosphorus	49 mg
Potassium	173 mg
Selenium	0.7 mcg
Sodium	5 mg

Nutrition Notes

Leaves, per 100 grams

19 calories, 0.04 g fat, 2.33 g carbohydrates, 3.15 g protein, fiber NA

Vitamin A	1942 IU (583 mcg RE)
Vitamin B1 (thiamine)	0.09 mg
Vitamin B2 (riboflavin)	0.13 mg
Vitamin B3 (niacin)	0.92 mg

Vitamin B5 (pantothenic acid)	0.04 mg
Vitamin B6 (pyridoxine)	0.21 mg
Vitamin B9 (folic acid)	36 mcg
Vitamin C	11 mg
Calcium	39 mg
Copper	0.13 mg
Iron	2.22 mg
Magnesium	38 mg
Phosphorus	104 mg
Potassium	436 mg
Selenium	0.36 mcg
Sodium	11 mg
Zinc	0.2 mg

Green Deane's Notes

When the Spanish explorer Pánfilo de Narváez was on an expedition in 1528 near what is now Tallahassee, Florida, he saw pumpkins under cultivation by the Seminole people. These pumpkins—known botanically as *Cucurbita moschata* and locally as Seminole Pumpkins—still grow in the wild in a number of states. They might have even been in Massachusetts when the Pilgrims arrived.

Dr. Julia Morton, an expert on edible and poisonous plants in the southeastern US, wrote the following detailed description of the species:

A mainstay of Florida Indians and early settlers, the Seminole pumpkin is botanically identified as a form of Cucurbita moschata Poir., the species embracing the Cushaw or winter Crookneck squashes. It will spread over the ground, drape a fence or climb trees; needs to be fertilized only at planting time; requires no protection from insects. The fruit, variable in form and size, is hard-shelled when mature and keeps at room temperature for months, is excellent baked, steamed or made into pie. The Indians sliced, sundried and stored surplus pumpkins. Very young, tender fruits are delicious boiled and mashed; the male flowers excellent dipped in batter

and fried as fritters. Thus, the vine produces three totally different vegetables. This is an ideal crop for the home gardener. The portion of the vine which has borne will die back but vigorous runners, which root at the nodes, will keep on growing, flowering and fruiting, yielding a continuous supply.

As Norton notes, a Seminole Pumpkin will store for several months—even in hot weather—if it has good ventilation. The pumpkin, which weighs about 3 pounds on average, is round and lightly ribbed, with tan skin or mottled and green. The sweet flesh is deep orange and dry. Highly productive, it is resistant to insects and disease. The fruit is more closely related to butternut squash and calabaza than the common Halloween pumpkin (*C. pepo* and *C. maxima*). Fruit fiber about 35% of its weight.

Wild Radish

Raphanus raphanistrum

NOTABLE NUTRIENTS OR USES Potassium, sodium, calcium, vitamin C, vitamin A

SAFETY NOTES Wild radish greens can be eaten raw but may upset your stomach—try a little before eating more.

NATIVE STATUS Introduced



Nutrition Notes	
Per 100 grams	
16 calories, 0.1 g fat, 3.4 g carbohydrates, 0.68 g protein, 1.6 g fiber	
Vitamin A	391 IU (117 mcg RE)
Vitamin B1 (thiamine)	0.01 mg
Vitamin B2 (riboflavin)	0.04 mg
Vitamin B3 (niacin)	0.25 mg
Vitamin B6 (pyridoxine)	0.07 mg
Vitamin B9 (folic acid)	25 mcg

Vitamin C	14.8 mg
Calcium	25 mg
Copper	0.05 mg
Iron	0.34 mg
Magnesium	10 mg
Phosphorus	20 mg
Potassium	233 mg
Selenium	0.6 mcg
Sodium	39 mg
Zinc	0.28 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION Annual plant in the mustard family, typically less than 3 feet tall. Flowers four-sepaled, four-petaled, six-stamened, four long pistils and two short pistils in middle; flowers solitary and petals clearly veined. Leaves lobed, tough, stems round. Seedpods stick out around the stem like a spiral staircase and break into fragments to expose the seed. Whereas other mustards tend to grow tall, radishes tend to be serpentine.

TIME OF YEAR Spring to summer in northern climes, winter in Florida

RANGE Primarily the eastern and western US

ENVIRONMENT Well-drained, sandy to rich soils; old pastures, gardens, lawns, roadsides

METHOD OF PREPARATION Leaves as potherb, seeds for spice or flavoring, can use flowers to flavor vinegar. Some young leaves can be used raw in salads (see Safety Notes). Roots peeled and boiled

Green Deane's Notes

The wild radish looks similar to its equally peppery cousin, the wild mustard. Both belong to the mustard family (Brassicaceae), are edible,

appear at the same time, and are used in more or less the same ways—but how do you tell them apart?

Wild radishes have singular flowers, while mustards have flowers that grow in clumps. The petals of radish flowers are veined; mustard flowers are not. Radish seedpods are segmented; those of mustards are not. Also, wild radishes tend to grow to 1 or 2 feet high, maybe 3 feet max, then go serpentine and start to pile up; in contrast, wild mustards grow up rather than out—as tall as 4–6 feet. You can usually tell a field of wild radishes from a field of mustards at a glance.

Like mustard greens, wild radish greens make an excellent potherb, boiled for 10 minutes or so in plenty of water. I find boiled radish greens one of the tastiest short-lived plants of spring. That's the only flaw of the Wild Radish: It sticks around for a few weeks and then it's gone. Thus, for a few weeks I stay busy harvesting, blanching, and freezing as much as I can process.

Wild radish blossoms are edible, as are the seedpods, which can be eaten raw, cooked, or pickled. The roots are likewise edible. The tough outer layer peels off like a jacket—often in strips the way colors wrap around a barber pole—to reveal the smooth inner core. I dice the roots and cook them in plenty of boiling salted water for 45 minutes. Depending upon their age, they can occasionally be fibrous, but they're still quite tender and tasty. They do, however, smell like radishes when you peel them, and they can fill your house with a sulfurous aroma as they cook. I like them with salt, pepper, and butter. Cooked, they're not peppery at all but rather mild—to me they taste more like kohlrabi than radishes.

The nutritional profile for radish sprouts is similar to that of the entire plant (see box), although the sprouts are higher in a few vitamins and minerals. Most notably, the sprouts contain about twice the vitamin C of the plant as a

whole (29.8 mg versus 14.8 mg) and almost four times as much folate (95 mcg versus 25 mcg).

Wild Rice

Zizania spp.

NOTABLE NUTRIENTS OR USES Protein, fiber, magnesium

SAFETY NOTES Harvesting wild rice in some states requires a license (Minnesota, for example)

NATIVE STATUS Native



Nutrition Notes

Per 100 grams

355 calories, 1 g fat, 75.3 g carbohydrates, 11.2 g protein, 1 g fiber

Vitamin B1 (thiamine)	0.44 mg
Vitamin B2 (riboflavin)	0.6 mg
Vitamin B3 (niacin)	6.2 mg
Calcium	20 mg
Copper	0.3 mg
Iron	4.2 mg
Magnesium	139 mg
Manganese	1.1 mg
Phosphorus	348 mg
Potassium	257 mg
Sodium	26 mg

Green Deane's Itemized Plant Profile

IDENTIFICATION *Zizania aquatica*, erect annual aquatic grass to 10 feet tall. Stems hollow, leaves flat, to 4 feet long and 2 inches wide, leaf markings purple with thick midrib often nearer one leaf side than the other. Flowers large, open, terminal panicles, 2 feet long and 1 foot wide. Male flowers on lower portion of the flower droop, female parts stiff, twisted, barbed awns; seed kernels shallow-grooved the entire length of one surface, long, nearly cylindrical, purplish-black when ripe, closely adhering to thin brown hull. Roots slender, fibrous, shallow

TIME OF YEAR Late summer, mid-August into mid-September

RANGE *Z. aquatica*, along the Atlantic Coastal plain from central Florida to the northeastern end of North America. From this endpoint, west and southwest along the Great Lakes, one finds *Z. palustris*. Both of these are annuals. *Z. texana*, a perennial, grows only in Hays County, Texas, near the San Marcos River.

ENVIRONMENT Freshwater plant; thrives in brackish water in low marshes bordering tidal rivers, in no more than 2 feet of water. Also grows wild in shallow freshwater lakes and at the edges of lakes and streams

METHOD OF PREPARATION Hulled grains usually boiled. They can also be popped like popcorn or ground into a flour, used with other flours, or added to stews as a thickener.

Green Deane's Notes

Love and marriage, horse and carriage, wild rice and canoe—not exactly lyrical, but you get the idea. If you want wild rice other than from a grocery store, you have to go where it is, and that's in water, via canoe.

Grains are collected by using two sticks the length of your arm. One is used to bend the plant over the canoe. The other stick is used to gently brush the plant to knock off the ripe seeds. Successive visits to the same plant are possible, as not all the seeds ripen at the same time. Harvesting can start as early as after 4.5 months of growth. Grain is harvested when the plants are still green—if they're brown, you're too late.

Collected grains should be sundried for at least a couple of days. An alternative is parching the grains, or heating them in an open pan and stirring until they're dry. Remove the hulls from parched rice immediately, or the grains will remoisten.

Wild rice was a staple food of many Native American tribes, and it still is in many places, particularly in northern regions. It's also one of my favorite wild foods, though I live at the very end of its range.

Here in Florida, *Z. aquatica* often gets confused with *Zizaniopsis miliacea*, or Giant Cut Grass, which looks similar. The flower is the quick key to separating the former from the latter: The female parts of the flower on wild rice are stiff and point up, whereas the entire inflorescence—the male and female parts—droops on *Z. miliacea*.

Wild rice is about 77% carbohydrates and between 15% and 17% protein. The grains are also rich in essential amino acids, especially lysine and methionine. (See box for additional information.)

Willow

Salix spp.

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, potassium, calcium, phosphorus

SAFETY NOTES See preparation notes below; use caution if you are on blood thinners or avoid taking aspirin because of willow's salicylic acid content.

NATIVE STATUS Native and/or introduced



Green Deane's Itemized Plant Profile

IDENTIFICATION Deciduous tree or shrub to 40 feet tall. Leaves alternate, simple, lanceolate, 5–8 inches long and 0.4–1 inch wide; margins finely toothed, upper surfaces smooth, dark green, lower surfaces whitish; stems strong, long, limber. Flowers are catkins emerging at the same time as the new leaves; silk-tipped seeds released from small pods that split in the spring. The Carolina Willow (*Salix caroliniana*) has yellow glands on the tip of each leaf tooth; at the base of young leaves, it has additional small, round, winglike leaves that resemble mouse ears.

TIME OF YEAR Year-round in southern climes, spring to fall farther north

RANGE All of North America

ENVIRONMENT Acidic, alkaline, loamy, moist, rich, sandy, or clayey soils. Grows well near water but has some drought tolerance.

METHOD OF PREPARATION Shoots, buds, young leaves boiled—expect them to remain bitter. Inner bark edible in a pinch. Different willows, however, have different edible parts, more than I have room to list here. Native Americans chewed the leaves and inner bark or boiled them in a tea to relieve fever, toothache pain, arthritis, and headache.

Nutrition Notes

Leaves, per 100 grams

122 calories, 1.6 g fat, 28 g carbohydrates, 5.1 g protein, 3.3 g fiber

Vitamin A	6100 IU (1830 mcg RE)
Vitamin B1 (thiamine)	0.09 mg
Vitamin B2 (riboflavin)	0.19 mg
Vitamin C	41 mg
Calcium	268 mg
Copper	0.2 mg
Manganese	< 0.1 mg
Phosphorus	127 mg
Potassium	472 mg
Zinc	2.9 mg

Green Deane's Notes

The willow is not prime eats—to the contrary, it's famine food. But it can cure a headache and other pains, not to mention it's surprisingly nutritious.

The inner bark of the willow is edible, though you'd probably have to boil it a few times to make it so. In Scandinavia it was dried, pulverized, and mixed with flour to make bread. Young willow shoots, buds, and leaves are also edible and very bitter. Boiling is the method commonly used to make them more palatable, but they can be eaten raw if you can manage that.

It would be difficult indeed to eat 100 grams of willow leaves, but we do have some nutritional data for them (see box). Some willows are higher in specific nutrients than others: *S. arctica*, for example, is high in phosphorus (190 mg); *S. reticulata* is a good source of magnesium (67 mg), and *S. aretophila* is high in vitamin C (332 mg). One study also showed that willows contain beta-carotene. Swamp willow had 7.03 mg per 100 grams of fresh material and 20.72 mg dried, while Upland Willow had 8.97 mg (fresh) and 27.38 mg (dried).

Willow is primarily of interest for its medicinal properties. When you eat willow leaves or the bitter inner bark, your stomach acid combines with a chemical in the plant called salicin to make salicylic acid, a natural pain reliever that works by depressing parts of the central nervous system. Hippocrates advised women to chew willow leaves to relieve the pain of childbirth, and in North America at least a dozen Indigenous tribes used willow to relieve fevers, aches, and pains. By the early 19th century, salicylic acid was used as an ingredient in mass-produced pain relievers. The problem was, these products caused stomach irritation.

Starting in the 1830s, scientists worked to come up with a salicylic acid pain reliever that didn't upset the stomach. Chemists at Bayer (then a company that manufactured fabric dyes) succeeded in 1897, but they did it with a different chemical—acetylsalicylic acid—isolated from a different plant called meadowsweet (*Filipendula ulmaria*). In 1899, the product was patented under the brand name Aspirin.

Willow bark is also a source of dye and cordage. In many areas where willows grow, locals also used it to make baskets, cages, fishing gear, and even horse bridles. The growing tips of willow branches, soaked in a little water, can be used to make a natural rooting/growth tonic for other plants.

Winged Yam

Dioscorea alata

NOTABLE NUTRIENTS OR USES No nutritional information available; calcium, vitamin C, protein

SAFETY NOTES The root is high in saponins and oxalates and thus should not be eaten raw.

NATIVE STATUS Native to Asia; probably introduced in the Americas in the 1700s



Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial, herbaceous, tuberous vine. Leaves large, arrow-shaped, opposite, edges often tinged in purple. Stem four-sided, climbs from lower left to upper right. Bulbils dark brown, round or cylindrical, lumpy. Underground root similar to a sweet potato in shape when grown in soft soil, lumpy and distorted when grown in hard soil.

TIME OF YEAR September to early December. The vine dies back in winter, making locating difficult.

RANGE Alabama, Florida, Georgia, and Louisiana

ENVIRONMENT Yams do well in sun or partial shade and prosper with ample rainfall. They require good drainage; therefore, they're often planted on mounds or ridges.

METHOD OF PREPARATION Fresh young roots peeled, cut up, and boiled like a potato. Older yams can be pounded into a sticky, elastic dough called yam fufu. To make a flour from the root, peel and slice it to a thickness of about a quarter inch. Parboil the slices, and dry them in the sun to reduce the moisture content; then grind the dried slices into a flour and run them through a sieve for a uniform texture. *Note:* If a yam tastes bitter after cooking, don't eat it.

Green Deane's Notes

Dioscorea alata feeds a lot of people and has in the US for perhaps 300 years. It's nutritious, and it tastes good. I mention it in nearly every foraging class.

Under cultivation, varieties of *D. alata* are the most common yam in the world. It has an underground root that can grow upwards of 7.5 feet long and weigh as much as 136 pounds (the known record is 180 pounds). When cultivated, it can grow long and uniform; in hard soil, or in old age, it can be lumpy and misshapen. Young roots tend to be solid and straight, while older roots tend to branch out. Boiling or roasting the root makes it edible. Young roots are best used like potatoes; older roots, while edible, have a different texture—they can be fried after boiling, and they make a good flour. Roots can be stored for several months.

Nutrition figures for 100 grams of the root are as follows: 439 calories; carbohydrates, 24.1%; protein, 2.4%; fat, almost 0%; fiber, 0.5%; calcium, 22 mg; vitamin C (as ascorbic acid), 10 mg; vitamin B1 (thiamine), 0.09

mg; vitamin B2 (riboflavin), 0.03 mg; vitamin B3 (niacin), 0.5 mg; and iron, 0.8 mg.

While *D. Alta* has a reputation for being buried very deep, that has not been my experience—I usually find the large root within a few inches of the surface. The largest one I've found to date is 30.2 pounds after washing. The vine usually puts on one tuber per season but can produce as many as three; thus, the older root can be lumpy but have a younger, well-formed root attached.

Wisteria

Wisteria spp.

NOTABLE NUTRIENTS OR USES Reliable nutritional data is hard to come by, but an Egyptian study found that *Wisteria sinensis* contains antioxidants that may play a role in fighting cancer.

SAFETY NOTES Only the flowers are edible—the rest of the plant is toxic, including the stems and seeds. As few as two raw seeds can kill a child. The seeds and leaves of Japanese Wisteria are reportedly edible cooked, but as I haven't tried them myself, I don't recommend eating them.

NATIVE STATUS American Wisteria (*Wisteria frutescens*) and Kentucky Wisteria (*W. macrostachya*) are native to the US; Chinese Wisteria (*W. sinensis*) and Japanese Wisteria (*W. floribunda*) are native to Asia and were introduced to the US in the 19th century; both are considered invasive.



Green Deane's Itemized Plant Profile

IDENTIFICATION Perennial climbing/twining vine with pinnately compound, alternate leaves to 20 inches long, 9–19 leaflets depending on species.

Chinese Wisteria (*W. sinensis*), gray bark, velvety seedpods, fragrant flowering spikes to 12 inches, jasmine-like scent, 9–13 leaflets (usually 11), twists counterclockwise, vine can grow to 100 feet long or more.

American Wisteria (*W. frutescens*), smooth seedpods, small flowers with no fragrance, long-lasting flower spike 5–6 inches (occasionally longer in old specimens), 9–15 leaflets, twists clockwise, vine grows 20–30 feet long.

Japanese Wisteria (*W. floribunda*), white stems, velvety seedpods, fragrant flowers, twists clockwise, up to 19 leaflets, vine grows to 30 feet long.

Kentucky Wisteria (*W. macrostachya*), smooth or slightly velvety seedpods, small flowers, slightly lilac-scented to no scent, flower spikes to a foot tall, 9–15 leaflets, twists counterclockwise (though I think that is an observational mistake), vine grows 20–30 feet long. Was once considered a variation of American Wisteria but blooms at a younger age than *W. frutescens*.

RANGE Eastern half of the US, including Texas but excluding Upper Midwest and Great Plains States

ENVIRONMENT Full sun and well-drained soils. Natives can tolerate some moisture and are found in coastal plains and along streams.

TIME OF YEAR Midspring to early summer, depending on species and location

METHOD OF PREPARATION Blossoms raw or cooked, but again, do *not* eat the stems or seeds.

Green Deane's Notes

Wisteria has a dual nature in several respects. First of all, it can be spelled *Wisteria* or *Wistaria*. Second, some say the genus is named after Caspar Wistar (1761–1818), a physician, anatomist, and abolitionist, while others say it's named for Charles Jones Wister Sr., a scientist who was Caspar

Wistar's cousin. Wister's father, Daniel, was a wealthy merchant who helped underwrite the voyage of the *Empress of China*, which brought a wisteria vine to North America from China in 1816. (A former warship built in 1783, the *Empress of China* was the first vessel to sail to China from the newly independent United States. It also carried the first official representative of the US government to China.)

Wisteria's dual personality continues with its edibility: The blossoms of the plant are edible raw or cooked, but all other parts are toxic. One of the most common of the 8–10 species of wisteria is *Wisteria sinensis*, or the Chinese Wisteria, the species that hitched a ride on the *Empress of China*. It can live at least 143 years (as of 2023) and is considered an invasive species in several states. It has naturalized from Maine to Florida and as far west as Arkansas.

And while wisteria—according to one of the two proposed explanations—might have been named for the underwriter of the ship that brought it back from China, there is a native wisteria in the US: *W. frutescens*. It has the smallest blossoms of the wisteria clan. Its flowers are unscented, and its seedpods are smooth rather than velvety. It is found from Virginia to Louisiana and down to Florida. If you find a plant with smooth seedpods but lightly scented flowers, it's *W. macrostachya*, or the Kentucky Wisteria, which is also a native (found in Louisiana, Texas, Kentucky, Illinois, Missouri, and Oklahoma).

Finally, to complicate things, there is also the Japanese Wisteria (*W. floribunda*), an escapee in the southern United States. In its native Japan, not only are the blossoms eaten but also the cooked young leaves and roasted seeds. I haven't tried eating either, and I advise you not to as well.

Wisteria is considered a pest because it will climb on virtually anything in its path and it kills other vegetation. Some wisteria vines can grow to 100 feet long and 15 inches around.

Yaupon Holly

Ilex vomitoria

NOTABLE NUTRIENTS OR USES No nutritional data available; caffeine, antioxidants

SAFETY NOTES The leaves are safe for humans, but the berries are toxic, and all parts of the plant are toxic to dogs. The poisonous chemicals aren't life-threatening as long as small amounts are involved, but they can make you or your pet throw up—they don't call it *vomitoria* for nothing.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION Erect, slow-growing, evergreen shrub or small tree forming dense thickets, about 25 feet tall but usually much smaller. Many stems, low, dense, rounded crown. Leaves thick, simple, alternate, leathery, varying in size and shape from plant to plant. Flowers inconspicuous, male and female flowers on different trees, bark thin, gray, and smooth. Red fruit a small, shiny drupe; though inedible, it can help you find the tree in the fall.

TIME OF YEAR Year-round

RANGE Found in southeastern coastal plains of the United States from Virginia to Florida and westward to south-central Texas

ENVIRONMENT Grows best in climates with mild winters and long, hot, humid summers. Found on coastal dunes and in maritime forests, upland woodlands, and pine flatwoods. For the most part, Yaupon inhabits well-drained sites but also occurs on streambanks, in wet woodlands, and in floodplains. Drought and disease resistant, salt tolerant, fast growing

METHOD OF PREPARATION Ranges from steeping a few leaves a few minutes in hot water to elaborate preparation of leaves and twigs, roasting, steaming, percolating



Green Deane's Notes

What if you could get your caffeine and antioxidants in a natural drink for free? People did that four centuries ago, and you can now.

The Yaupon Holly (*Ilex vomitoria*) is North America's version of yerba mate (*I. paraguariensis*). Spanish colonists in early Florida drank Yaupon tea, which they called Indian tea or *cacina*. One priest in 1615 wrote: "There is no Spaniard or Indian who does not drink it every day in the morning or evening." In the 1700s, English settlers in the Carolinas drank Indian tea daily. Although it fell out of favor in the US, yerba mate continues to be popular in South America and is considered a national beverage of Argentina, Uruguay, and Paraguay; it is also popular in Bolivia and Chile, as well as Syria and Lebanon. (It was brought to the Middle East by descendants of 19th-century South American immigrants who returned to their homelands in the 20th century.)

Yerba mate tea has (per 8-ounce cup) 54.5 calories, 13 grams of carbohydrates, 9.84 mg of calcium, 11.8 mg of sodium, and 40.3 mg of caffeine. (The average cup of regular tea has 26 mg of caffeine.) Yaupon is similarly high in caffeine and is also high in antioxidants (such as rutin, chlorogenic acid, neochlorogenic acid, and cryptochlorogenic acid) that are believed to benefit cardiovascular health, protect against cancer, and lower blood sugar. And unlike regular tea, Yaupon Holly is practically free of tannins, which reduces bitterness considerably.

Left to its own devices, the Yaupon Holly is a spindly understory tree. The best examples of the species I know of are cultivated ones in landscaping. The most common cultivar is *I. nana*, or *I. vomitoria* var. *nana*, a ubiquitous hedge plant in the South. In fact, there are some 17 different varieties of it.

Making Yaupon tea can be as simple as putting four or five leaves in hot (not boiling) water for 5 or 6 minutes or as involved as drying, steaming, or roasting the leaves beforehand. Some folks brew the twigs along with the leaves. Botanist William A. Morrill, PhD, wrote in 1940 that the best Yaupon tea was made by using an equal mix of chopped dried or roasted leaves and chopped steamed fresh leaves.

Yellow Pond-Lily

Nuphar spp.

NOTABLE NUTRIENTS OR USES Zinc, potassium, phosphorus, niacin, vitamin E

SAFETY NOTES See below for preparation tips.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION *Nuphar polysepala* (Great Yellow Pond-Lily), aquatic plant, rhizomes underground stems that are thick and fleshy. These rhizomes are hard to pry since they are submerged in mud and are difficult to dig. Leaves float on the water, glossy green, oval, 4–18 inches long and 3–12 inches wide, notched; provide shelter for fish. Flowers yellow, 2–4 inches in diameter, with 6–12 (usually 9) bright-yellow, petal-like sepals; true petals are smaller. Fruit an ovoid green to yellowish capsule 1–2 inches long.



Nutrition Notes: *N. polysephala*

Leaves, per 100 grams

361 calories, 0.8 g fat, 80 g carbohydrates, 7.9 g protein, 19 g fiber

Vitamin B1 (thiamine)	0.03 mg
Vitamin B2 (riboflavin)	0.07 mg
Vitamin B3 (niacin)	4.19 mg
Vitamin B5 (pantothenic acid)	1.3 mg
Vitamin B6 (pyridoxine)	1.3 mg
Vitamin B9 (folic acid)	5 mcg
Vitamin E (alpha-tocopherol)	35.64 mg
Calcium	27 mg
Copper	0.07 mg
Iron	1.47 mg
Magnesium	86 mg
Manganese	0.94 mg
Phosphorus	229 mg
Potassium	553 mg
Selenium	0.07 mg
Sodium	25 mg
Zinc	6.33 mg
Alpha-tocotrienol	1.59 mg
Beta-tocopherol	6.49 mg
Gamma-tocopherol	1.8 mg
Delta-tocopherol	1.3 mg

N. advena (spatterdock or yellow pond-lily), mostly submerged, leaves alternate, up to 16 inches long with wavy edges, elliptical to heart-shaped. Submerged leaves very thin and grow directly from rooted rhizome, floating and erect leaves attached to the stem. Flowers yellow, petals thick, heavy, rounded, showy; blooms first appear in late spring and continue into early fall. Seed capsule ringed with red.

Nutrition Notes: *N. polysephala*

Roots, per 100 grams

34 calories, g fat, 7.06 g carbohydrates, 0.69 g protein, 2.3 g fiber

Vitamin B1 (thiamine)	0.02 mg
Vitamin B2 (riboflavin)	0.02 mg
Vitamin B3 (niacin)	0.03 mg
Vitamin B5 (pantothenic acid)	0.14 mg
Vitamin B6 (pyridoxine)	0.68 mg
Vitamin B9 (folic acid)	5 mcg
Vitamin E (alpha-tocopherol)	0.42 mg
Calcium	23 mg
Copper	0.004 mg
Iron	1.21 mg
Magnesium	3 mg
Manganese	0.95 mg
Phosphorus	13 mg
Potassium	187 mg
Sodium	10 mg
Zinc	0.3 mg

TIME OF YEAR Leaves year-round and flowers in spring, depending on where you live. Seeds seasonally unless you are in a warm area, where it can seed all year.

RANGE *N. polysephala*, western US and Canada (including Alaska); *N. advena*, all of North America

ENVIRONMENT Ponds and still-water areas of slow-flowing streams

METHOD OF PREPARATION Young shoots and leaves edible cooked but might be too bitter to eat. Seeds edible, depending on species; I put the seedpods of *N. advena* in water and let them rot for a full three weeks before using; can be dried afterwards or popped like popcorn. Rhizomes are edible cooked, depending on species. Tea made from steeped flower sepals has a slight brandy-like flavor.

Green Deane's Notes

For decades I've tried every conceivable way of preparing the rhizomes of my local yellow pond-lily (*Nuphar advena*), which are chock-full of bitter tannins. I've raised them in tannin-free water, soaked them, leached them, boiled them for hours or simmered them for days, roasted them, dehydrated them, and tried various combinations of the aforementioned, but I've never managed to make them edible. This was always frustrating, as the root has a great texture much like eggplant, cuts up nicely, looks attractive, smells good, and tastes good until the bitterness kicks in. The seeds of *N. advena*, on the other hand, are tasty as well as nutritious.

We have nutritional data for the root and seeds of *N. polysepala*, which grows in the western US and whose rhizomes are definitely edible. (See box.) The seed data might be valid for *N. advena*, but there are no guarantees regarding the inedible root.

The Klamath people called yellow pond-lily *wokas* or *wocas*. They gathered the seedpods and popped them like popcorn or dried them and ground them into flour. The seeds were also used to make porridge and thicken soup. Tens of thousands of acres of wokas were harvested by the Klamath and presumably other tribes as well.

A book on Native American foodways, *Traditional Foods of Canadian Indigenous Peoples*, lists *N. advena* as having edible greens that were added to soups and stews. The recorded mineral content per 100 grams of leaves was 7.4 mg of calcium, 3.3 mg of phosphorus, 0.8 mg of sodium, 32 mg of potassium, 1.5 mg of magnesium, 0.2 mg of copper, 0.7 mg zinc, 9.1 mg of iron, and 3.4 mg of manganese. Additionally, the flowers were used to make tea, and the leaves and roots were used medicinally to stop bleeding; the rhizomes were also used in tanning and as an analgesic.

Yellow Thistle

Cirsium horridulum

NOTABLE NUTRIENTS OR USES Vitamin C, vitamin A, potassium, sodium, calcium

SAFETY NOTES Some people get contact dermatitis from touching thistles, so wear heavy gloves when foraging to be safe.

NATIVE STATUS Native

Green Deane's Itemized Plant Profile

IDENTIFICATION *Cirsium horridulum*, tough, spiny biennial or perennial herb 2–5 feet tall, basal and stem leaves lobed, lower stems' leaves 4–9 inches long, can be woolly in parts, second-year stems topped with “shaving brush” flowers, purple or yellow. In some thistle species, branching occurs throughout the stalk; in the bull thistle (*C. vulgare*), branching occurs only on top. The Spiny Poppy (*Argemone mexicana*), with which the yellow thistle is often confused, has flowers with large yellow petals, and is not edible.



Nutrition Notes: *C. horridulum*

Leaves, per 100 grams

57 calories, 3.46 g fat, 5.73 g carbohydrates, 2.72 g (0.9 g^{*}) protein, 1.1 g fiber

Vitamin A	1180 IU (354 mcg RE)
Vitamin B1 (thiamine)	0.08 mg
Vitamin B2 (riboflavin)	0.26 mg
Vitamin B3 (niacin)	1 mg
Vitamin B6 (pyridoxine)	0.26 mg
Vitamin C	50.3 mg
Vitamin E	1.05 mg
Vitamin K	556 mcg
Calcium	85 mg (304 mg [*])
Copper	0.18 mg (< 1 mg [*])
Iron	1.36 mg (0.8 mg [*])
Magnesium	40 mg (45 mg [*])
Manganese	0.4 mg [*]
Phosphorus	79 mg (13 mg [*])
Potassium	631 mg (69 mg [*])
Selenium	0.9 mcg
Sodium	146 mg (0.5 mg [*])
Zinc	0.24 mg (0.3 mg [*])
Beta-carotene	4109 mcg
Choline	20.5 mg (44.3 mg [*])
Lutein and zeaxanthin	12361 mcg

^{*}Shoots, per 100 grams (*C. muticum*)

TIME OF YEAR Best in spring, first or second year, starting in February in warm areas; later in northern climes. In Florida the seasons can be mixed, with the plant not taking a break between first- and second-year growth.

RANGE From Maine south along the Atlantic Coast to Florida, west from South Carolina to Texas. If you're on the Florida Gulf Coast, you might see *C. nuttallii*, which is tall and skinny with many branches.

ENVIRONMENT Sandy, open areas, moist or dry; old fields; roadsides; often the only plant still untouched in closely cropped pastures. Some reports say

they like wet areas, but I haven't observed that myself.

METHOD OF PREPARATION All of the following can be eaten raw or cooked: the inner stalks, peeled of green outer fiber; the core of unopened flower buds; and the first-year roots, once large enough to harvest. The seeds are edible as well; 12 pounds of seeds yields 3 pounds of edible oil.

Green Deane's Notes

Thistles, in this case *Cirsium horridulum*, are among the hardest-to-gather wild foods. But the reward is edible stalks, leaves (trimmed of spines), roots, and unopened flower bud bottoms. Like many tasty wild plants, the thistle did not make its way into mainstream food channels because of its spines, as well as its two-year growth habit: The first year, the plant is just a root and a rosette; the second year, it sends up a stem and blossoms.

The first-year root and leaves are edible, but there isn't much of a root until the end of the season. The leaves are edible, but don't even bother trying to cut off the spines—that's too labor-intensive. Instead, just knife-strip the green off the leaf, leaving the very edible midrib. Rub the "wool" off and enjoy, either raw or cooked.

All thistles in the genera *Cirsium* and *Carduus* are edible. To put it another way, there is no poisonous true thistle, but not all of them taste good. Another edible thistle profiled in this book is sow thistle ([page 263](#)), which belongs to the genus *Sonchus*.

The best part by far is the root at the end of the first year; it has been saving up energy so it can send up a blossom stalk the next year and reproduce. The root is edible raw or cooked and has a celery- or potato-like flavor. Once the plant sends up a flower stalk, the root is tough and essentially starchless.

The inner core of the second-year flower stalk is quite tasty and not that much work to prepare. The leaves are still edible if you strip them of spines,

as are the bottoms of the flower buds, though the bud bottoms aren't much more than a nibble. All can be eaten raw, steamed, or boiled; you can also roast them whole over a fire and squeeze out the cooked core, which looks like artichoke leaves.

Personally, I prefer the stalks of second-year plants in spring, when they are a foot or so high. I use a long-handled shovel to cut them at the base above the rosette. With heavy gloves and a trimmer, I hold the plant upside down and cut off the leaves and spines. Carefully peel the stalk of the fibrous coat, which is most of the green you'll see. Then you can eat it raw or cooked—boiled a few minutes and then served with butter, salt, and pepper, the stalk is absolutely delicious.

Yucca

Yucca spp.

NOTABLE NUTRIENTS OR USES Potassium, vitamin E

SAFETY NOTES Raw yucca blossoms and fruit can give you a stomachache, so try a little before eating a lot.

NATIVE STATUS Yucca's natural distribution range covers a wide swath of the Americas, from Guatemala north through Mexico to the southwestern US and as far north as western Canada. Yucca is also native northward to the coastal lowlands and dry beach scrub of the southeastern US, along the Gulf of Mexico and South Atlantic States from coastal Texas to Maryland, and occasionally as far north as New England.

Green Deane's Itemized Plant Profile

IDENTIFICATION *Y. filamentosa*, erect evergreen plant 4–25 feet tall, thick central stem, leaves long, dagger-like, sometimes branched, with shedding threads, flowers tulip-like, waxy, drooping. Fruit to 5 inches long, cylindrical, purple skin and pulp, many seeds. *Y. gigantea*, a desert species, can grow to 40 feet tall, is single- or multitrunked, and has erect spikes of pendant flowers followed by brown, fleshy fruits to 1 inch long. *Y. glauca* is a low-growing shrub with white-to-pale-green pendant flowers and shiny black seeds.



Nutrition Notes

Per 100 grams/105 grams*

165 calories, 25.84 g/27.25 g fat, 69 g/72.69 g carbohydrates, 1.4 g protein, 3.7 g/2.9 fiber

Vitamin B5 (pantothenic acid)	0.89 mg (per 100 grams)
Vitamin B6 (pyridoxine)	0.13 mg/0.14 mg
Vitamin E	2.7 mg/2.92 mg
Copper	0.12 mg (both studies)
Magnesium	45.6 mg/48 mg
Manganese	0.28 mg/0.3 mg
Phosphorus	99 mg/104 mg
Potassium	865 mg/911 mg
Sodium	311 mg (per 105 grams)

*Data based on two studies; the part of the plant tested wasn't specified.

TIME OF YEAR Blossoms in late spring or early summer, fruits later in the year in northern climes

RANGE *Y. filamentosa*, as far west as Texas, north to Canada, and east to Massachusetts; also found in Florida. *Y. gigantea*, across the Desert Southwest from Texas to California and parts south. *Y. glauca*, from the Southwest north to Alberta

ENVIRONMENT *Y. filamentosa*, generally dry (but not arid) areas; other species prefer arid areas.

METHOD OF PREPARATION *Y. filamentosa*, six-sided fruits edible raw or cooked, rubbery and bitter; cooking helps some. Flower petals raw in salads sparingly; may also be batter-dipped and fried, boiled, or roasted. Very young flower stalks peeled and boiled. Seeds roasted, ground, or boiled until tender

Green Deane's Notes

When isn't a yucca a yucca? When it's spelled with one C, as in *yuca*. What's the difference? A bellyache, maybe more. The yucca in the wild has several edible parts aboveground. The yuca in the grocery store is a cultivated cassava and has one edible part belowground.

So what parts of the yucca are edible? The flower petals can be eaten raw or cooked, though raw they usually give me a stomachache, at best a throatache. Try eating just one petal—not the whole blossom—and wait 20 minutes. The taste is sweet at first, but if it becomes bitter or burns your throat, the flowers should be cooked; I recommend boiling them for 10 minutes or so. The young fruits are best roasted until tender; they're edible raw, but again, they tend to be very bitter. Scrape out the pulp and separate it from the seeds. The pulp, sweetened, can be used for pies, either boiled or dried in the oven. The seeds can be roasted (375°F) until dried, ground roughly, or boiled until tender. The young, short flower stalks are also

edible, but well before they blossom. Cut into sections, boil for 30 minutes in plenty of water, and peel (you can also peel before cooking).

For survivalists, the yucca provides more than food. Yucca wood—actually, the dried flower stalk—has the lowest kindling temperature of any wood, which is desirable for starting fires, especially if you're using a bow and drill. (Use the yucca stalk for the drill.) The roots and leaves can be moistened with water and used as a natural soap; the saponins, which make the lather, are also what makes yucca bitter. You can also crush the root of some yuccas and wash your hair with the juice. Plus, the leaves can be made into extremely strong rope.

Glossary

alkaloid a large group of natural organic compounds, all of which include at least some nitrogen; alkaloids are common in plants and many are toxic to animals or humans

amino acids the molecular “ingredients” required to make proteins; there are nine amino acids required by the human body, and all of them must be obtained from diet: histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine

annual a plant that completes its entire life cycle in one growing season; compare with perennials, which persist for at least several years, often much longer

anthocyanins a group of compounds found in plant pigments; often red, blue, or purple, these compounds are often found in fruits and vegetables and rich in antioxidants

antioxidants chemical compounds found in many plants that prevent oxidative stress (a chemical imbalance that causes cell damage at the cellular level)

apigenin a flavonoid (see definition) found in a number of plants, including American beautyberry

astringent a chemical compound that causes the skin or tissues to contract; in terms of taste, astringent compounds lead to a dry or “puckering” sensation

bark the outermost layer of a root or a stem; the bark protects a plant and includes the inner bark, known as the phloem, which helps transport food to the rest of the tree

basal rosette a low-growing (basal), often circular grouping of leaves growing from the base of a plant; rosettes get their name for their resemblance to roses; example: dandelions have a basal rosette in their first year of growth

biennial a plant that completes its life cycle in at least two seasons; generally speaking, biennial plants produce leaves, roots, and stems in their first year, then flower in their second year; mullein, the common weed, is an example

biotin (Vitamin B7) one of the eight B vitamins, biotin is a water-soluble essential nutrient (see essential nutrients) found in foods like eggs, meats, spinach, as well as in wild foods; biotin is an important component in several metabolic processes; most adults require 30 mcg per day

boron a trace element (see trace minerals) found in a variety of foods, boron is not classified as an essential mineral (one humans need to survive), but it may have positive impacts on health; look for future studies for more information

bracts a modified leaf (not petals, for which they are often mistaken) found below a flower or a flower cluster; bracts serve a number of purposes: they protect the flower from the environment, and others are vividly colored to attract pollinators (as in the poinsettia)

calcium an essential mineral and the most common mineral in the body, calcium is essential for bone and teeth health and it's also essential to the nervous and circulatory systems; the recommended daily amount for adults is 1,000 mg

calcium oxalate calcium oxalate a chemical compound common in many plants, often present as a defensive mechanism; ingesting a plant with calcium oxalate causes a burning sensation

cambium a thin tissue layer just below the bark of a tree; this layer produces new wood and bark growth; a number of species have edible cambium as well

capsule a dry seed receptacle found in many plants; capsules often split open, enabling seeds to spread more easily

carbohydrates a huge group of chemical compounds consisting of carbon, oxygen, and hydrogen, carbohydrates are energy sources; there are several main groups of carbs, including sugars, starches, and cellulose; finding carbohydrate sources can be difficult when foraging

carotenoids a large group of fat-soluble orange, yellow, or red pigments found in plants; carotenes and xanthophylls are the two primary groups of carotenoids and both are important in photosynthesis; carotenoids are often high in antioxidants and are beneficial for human health

catkins a dangling flower spike; birch, willow, and other trees are well-known for producing catkins

chloride an essential mineral consisting of a negatively charged chlorine atom; chloride is obtained most often from sodium

chloride (table salt); sodium is essential on a cellular level, where “sodium channels” enable muscle cells and neurons to function; chloride deficiency is very rare, but consuming too much sodium (via salty foods) is a serious health issue

choline an essential nutrient required for a variety of metabolic processes, the body can make its own choline (in the liver), but additional choline is necessary from one’s diet; adults need 550 mg (males) or 425 mg (females) per day

cobalt an essential element, cobalt is present in the body in small amounts, where it helps the body produce red blood cells; boron deficiency can lead to anemia

common name common names are informal names used to refer to plants, animals, and other lifeforms; common names often vary by region or country, making them a source of potential confusion, especially if the common name is somewhat misleading (for example, Australian pine, which isn’t actually a pine)

coniferous a nonflowering, usually evergreen plant that primarily spreads its seed via cones; conifer examples include pines, cedar, junipers, and others

copper an essential mineral, copper plays a number of important roles, everything from brain development to metabolism

deciduous a tree, shrub, or herb that loses its leaves for a portion of the year

diuretic a chemical compound that leads to excess urine production

emetic a chemical compound that leads to vomiting

epigallocatechin-3-gallate a chemical compound found in a variety of plants, notably tea, that may have health benefits

erucic acid a chemical compound found in plants in the mustard family, especially rapeseed and mustard when processed into oil; very high levels of erucic acid may lead to cardiac problems, but regulators limit the amount of erucic acid allowed in food products

essential nutrients and trace minerals a group of compounds that the human body needs to function on the chemical level; in many cases, the body cannot produce them, so they must be obtained via diet; there are two main classes: vitamins are organic compounds (made by plants/animals) and trace minerals are chemical elements that are necessary in small amounts. There are 13 vitamins: A, C, D, E, K, B1 (thiamine), B2 (riboflavin), B3 (niacin), B6 (pyridoxine), B12 (cyanocobalamin), B5 (pantothenic acid), B7 (biotin), and B9 (folate). Essential trace elements include: calcium, phosphorous, iron, magnesium, chloride, sodium, sulfur, zinc, iodine, cobalt, copper, manganese, selenium, and fluoride

expectorant a chemical compound that helps remove mucus from one's airway

fagin also known as trimethylamine, fagin is a toxic compound found in some plants, most notably beech nuts (*Fagus* genus; for which it is named)

flavonoids and flavonols flavonoids are a large group of chemical compounds found in fruits and vegetables; chemically, they consist of polyphenols (repeated chains of phenols, aromatic

organic compounds); flavonols are a subset of flavonoids; flavonoids are sought after for their many health benefits, including use as antioxidants

fluoride a naturally occurring mineral found in many foods; a lack of fluoride can lead to cavities, which is why many municipalities fluoridate their water

forb a flowering herbaceous plant that is not a grass

genus the first component of an organism's scientific name; a genus is akin to a surname in people, in that it's shared by other close relatives

germinate when a plant's seed (or spore) sprouts; the germination process and the required environmental conditions can vary significantly by plant

Euell Gibbons author of *Stalking the Wild Asparagus*, Gibbons (1911–1975) was arguably the most prominent forager of the 1960s and the 1970s. His work laid the groundwork for all foragers who followed

hardwood wood that originates from flowering trees (angiosperms), not cone-bearing trees (conifers); generally speaking, wood from hardwoods (oaks, maples, etc.) is harder and denser than wood produced by conifers (pine, cedar)

herb a green, leafy, seed-bearing plant without a woody stem; it dies back each year

histidine an essential amino acid involved in protein production

hormone a group of chemical signals found in multicellular organisms; hormones in human include insulin, adrenaline, testosterone/estrogen, and others

inflorescence a flower cluster or grouping; inflorescences can be complex, as they are often adapted to attract pollinators

introduced species a species introduced by people to an area where it was not previously found

invasive species an introduced species that outcompetes native species and harms the environment or native species in the process; states and local governments often keep their own list of invasives and spend a great deal of effort (and money) to control them; once an invasive species is present, eradicating it can be difficult or impossible (e.g., kudzu)

iodine an essential mineral required for the human body to produce thyroid hormones; iodine deficiency leads to goiter (swelling of the thyroid gland in the neck) and neurological/physical development issues; today, table salt fortified with iodine helps prevent deficiency

iron an essential mineral that helps the body maintain and produce blood, including hemoglobin; blood is always red (not blue, contrary to popular belief, though blood in veins is a reddish-purple); iron deficiency leads to anemia

isocupressic acid a toxic compound found in some conifers

juglone a compound produced by plants in the walnut family; concentrated in the hulls/shells, juglone from the dropped shells

inhibits plant growth, preventing competing plants from growing nearby

kaempferol a flavonol found in some plants, including birch trees

l-canavanine an amino acid found in alfalfa and related plants that can be toxic; heating apparently destroys its toxic activity

leucine an essential amino acid found in a variety of meat and dairy products; it enables the body to make proteins, heal damage, and regulate metabolism

lutein a plant pigment (see carotenoids), lutein is especially important for human vision; it's found in eggs, leafy greens, fruits, and vegetables

lysine an essential amino acid found in dairy, meat, and fish; the body uses it to build proteins

magnesium An essential mineral, magnesium is found in legumes, whole grains, leafy vegetables, and also added (fortified) to foods; it's important for proper functioning of muscles and nerves, producing bone, and more; the recommended daily amount is 400–420 mg for males and 310–320 mg for females

manganese an essential mineral, manganese is important for metabolism, the immune system, and other roles; it is found in whole grains, seafood, nuts, and other foods; the recommended intake for manganese is 2.3 mg for males and 1.8 mg for females

mast a crop of acorns from an oak; oaks don't produce acorns until they are about 20 years old

melatonin a hormone (see hormone) created in the brain to regulate the body's circadian rhythms (internal clock)

methionine an essential amino acid containing sulfur; in the body it helps remove toxins (such as heavy metals) and is generally an antioxidant

methy salicylate the common "minty" compound found in wintergreens related to aspirin and found in toothpastes and mouthwashes; it is found in a number of wild foods

naturalized species a nonnative species with a sustaining population in its new area; not all naturalized species are invasive (see invasive species)

nitric oxide a neurotransmitter involved in regulating blood flow and blood pressure among many other roles; foods rich in nitric oxide include beets, garlic, meats, and leafy greens

omega 3 & 6 two important types of unsaturated fats necessary for brain health and cellular functioning; foods rich in these fats include nuts, fish, and seafood

ovate an object (often a leaf) having an oval shape

oxalate see calcium oxalate

panicle a spike-like flower cluster, as seen in wild rice and other plants

pantothenic acid (b5) an essential vitamin found in meats, seeds and nuts, eggs, and others; the recommended daily intake is 5 mg for adults

pectin a fiber that's widespread in plants; pectin is most well-known for its use in helping jellies and jams to gel; it can also be found in sizable amounts in certain plants

pendulous drooping or dangling (as in wild cherries) plant parts, often in reference to fruit clusters (see highbush cranberry, [page 158](#))

perennial a plant with a life cycle exceeding two years, often regrowing from a portion of the plant that persists

petiole the portion of a leaf (stalk) that attaches to the plant's stem

phenolic compounds chemical compounds found in plants that often have antioxidant effects when consumed

phenylalanine an essential amino acid found in meat, poultry, and eggs; the body uses it to create a host of important compounds (including dopamine)

phloem a tissue layer in plants that transports food (sugar) and other materials from the leaves down to the rest of the tree (see xylem)

pistils the female organs in a flower, including the ovary, stigma, and style

potassium an essential mineral that enables normal cellular function, it is found in a wide variety of foods; the recommended daily amount is 3,400 mg for males and 2,600 mg for females

prostrate a plant that has a low-growing habit

quercetin a plant pigment and a flavonoid, found in a variety of food and with antioxidant properties

raphides sharp, needle-like calcium oxalate crystals found as defensive mechanisms in some plants (see jack-in-the-pulpit, [page 166](#))

rhizomes an underground stem found in many plants that is used to store energy and also enables new plant generation via shoots

root plant organs that hold a plant in place and enable it to acquire water and other nutrients

runners known botanically as stolons, runners are stems that grow atop the surface or slightly underground; runners produce new roots and aboveground branches

rutin a plant pigment, rutin is found in fruits and vegetables; it has antioxidant properties

safrole a chemical compound found in plants, notably sassafras, which was once used as the flavoring for classic root beer; now banned by the FDA because it may be carcinogenic in high doses

salicin a chemical compound found in willow bark and other plants that is similar to aspirin

saponins a group of bitter, often toxic chemical compounds found in some plants; they are named because the compounds often were used to produce soaps (or used as fish poisons)

sapwood the newest wood in a tree, sapwood helps transfer water through the tree

scientific name a unique two-part name, usually in Latin or Greek (or a combination thereof), for every type of individual

organism; scientific names are an attempt to avoid the confusion that can come with common names (which vary by area/language)

sedge plants belonging to the genus *Carex* (sedges), which look somewhat like grass; to identify a sedge, look at its triangular stem; as the old rhyme goes, “sedges have edges”

selenium an essential trace element needed for reproduction, DNA maintenance and creation, and cellular repair; the recommended intake for adults is 55 mcg

sodium an essential nutrient important for the nervous and muscular systems, most people ingest more sodium than is recommended (500 mg per day); too much sodium is implicated in a host of health issues (including heart disease)

species an individual variety of organism capable of interbreeding

stamens the male organs of a flower, which include the anther and a filament

succulent a plant, often from an arid environment, with thickened tissue, usually for water storage

sulfur an essential mineral, sulfur makes protein production possible; it's found in a variety of foods, including nuts, meat, and garlics and onions (which get their characteristic smells from sulfur compounds)

tannins chemical compounds found in many plants; often bitter, tannins are what make acorns unpalatable without preparation

taproot a thick root, often adapted for energy storage (as in a carrot or a dandelion) that grows straight down into the ground

tendrils wire-like threads that a plant (such as wild grape) uses to secure itself and/or “climb” up other plants

threonine an essential amino acid involved in liver health, skin and tooth formation, and more

trace minerals see essential nutrients and trace minerals

trilobate three-lobed, usually in reference to leaf shape

tryptophan an essential amino acid required for the production of proteins, brain health, and more; the recommended daily allowance is 250–425 mg per day

valine an essential amino acid used in energy production and often found in meat and dairy products

vitamin A a group of compounds that includes retinol, beta-carotene, and others; vitamin A is found in many foods; it helps many body systems function correctly, including the eyes, the cardiovascular system, and more; the recommended daily allotment is 900 mcg RAE (males) and 700 mcg RAE (females)

vitamin B1 (thiamine) a chemical compound found in some foods (and often added to fortify foods), thiamine is essential for metabolism; too little dietary thiamine causes beriberi; the recommended dietary allowance for adults is 1.2 mg (males) and 1.1 mg (females)

vitamin B2 (riboflavin) a chemical compound found in some foods (or added to others), riboflavin plays an essential role in

metabolism and growth; the recommended dietary allowance for adults is 1.3 mg (males) and 1.1 mg (females)

vitamin B3 (niacin) a chemical compound present in many foods, niacin is important as a catalyst in many different reactions within the body; most folks in the US consume more niacin than recommended; a niacin deficiency leads to a disease called pellagra, which was once common prior to the 20th century

vitamin B6 (pyridoxine) a chemical compound in many foods and an essential vitamin responsible for protein production; found in fish, meat, and other foods, the recommended dietary allowance is 1.3 mg

vitamin B9 (folate/folic acid) a chemical compound important to the function of DNA and RNA, folate is an essential mineral found in leafy vegetables, fruits, nuts, seafood, and more; the recommended dietary allowance is 400 mcg for adults

vitamin B12 (cyanocobalamin) a chemical compound essential for nervous system health, it is found in meats, dairy, and other animal products; the recommended allowance for adults is 2.4 mcg

vitamin C (L-ascorbic acid) a chemical compound essential for skin health and the manufacturing of neurotransmitters and proteins; found in many fresh fruits and vegetables, vitamin C deficiency leads to scurvy, a now-rare disease thanks to fortified foods; the recommended daily allowance is 90 mg (males) and 75 mg (females)

vitamin D a chemical compound responsible for healthy bone production, among many other functions, vitamin D is something

of an oddity, as it's not found in many foods (instead, the body makes it when sunlight interacts with the skin); fish, mushrooms, and nuts are among the best natural sources of vitamin D; the recommended daily allowance for adults is 15 mcg (higher for the elderly)

vitamin E a group of closely related chemical compounds important as antioxidants; it is found in nuts, leafy greens, and other foods; the recommended daily allowance for adults is 15 mg

vitamin K a group of chemical compounds that play an essential role in bone production, metabolism, and blood clotting; it is found in leafy greens, fruits, and some meat products; because vitamin K is acquired from food, newborns have very little and are given vitamin K shots at birth in order to prevent potential bleeding issues; the recommended daily allowance is 120 mg for adults

xylem the living tissue in a tree responsible for transporting water and nutrients from the roots up to the rest of the tree

zeaxanthin a plant pigment (see carotenoid) important for vision health and as an antioxidant; found in leafy greens, fruits, and eggs

zinc an essential mineral, zinc is important to maintain metabolism; it is found in meat, seafood, dairy, and some plants; the daily recommended allowance for adults is 11 mg (males) and 8 mg (females)

Recommended Reading

Eattheweeds.com, home of “Green Deane” Jordan

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About the Author



“Green Deane” Jordan is a life-long Greek bachelor with a degree in music and graduate studies in communications. In short, he’s paid to play and write. He is the author of many articles and two other books: *1001 Facts Somebody Screwed Up* and *1001 More Facts Somebody Screwed Up*. He doesn’t watch television, and he is not a vegetarian (a common assumption).

Green Deane's hobbies include gardening, cooking, collecting cast-iron cookware, dancing, canoeing, public speaking, kayaking, cast netting, fishing, biking, hiking in Greece whenever possible, and, of course, foraging for wild foods and other unusual edibles. He has planted over 12 dozen different kinds of edible plants—cultivated and wild—on his small suburban lot in Central Florida, and he maintains a year-round 20x20-foot garden. On his cul-de-sac, he is the only one without a lawn of decapitated grass, much to his neighbors' collective horror; he thinks of it as green diversity. Green Deane is also a professional musician and a writer. He is perhaps best known for his popular foraging website, *Eat the Weeds*.



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About the Author

"Green Deane" Jordan is an expert forager who teaches foraging classes and runs a popular foraging website (also called Eat the Weeds). His hobbies include gardening, cooking, dancing, canoeing, public speaking, kayaking, fishing, biking, hiking, and, of course, foraging for wild foods and other unusual edibles.

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